JULY 1972

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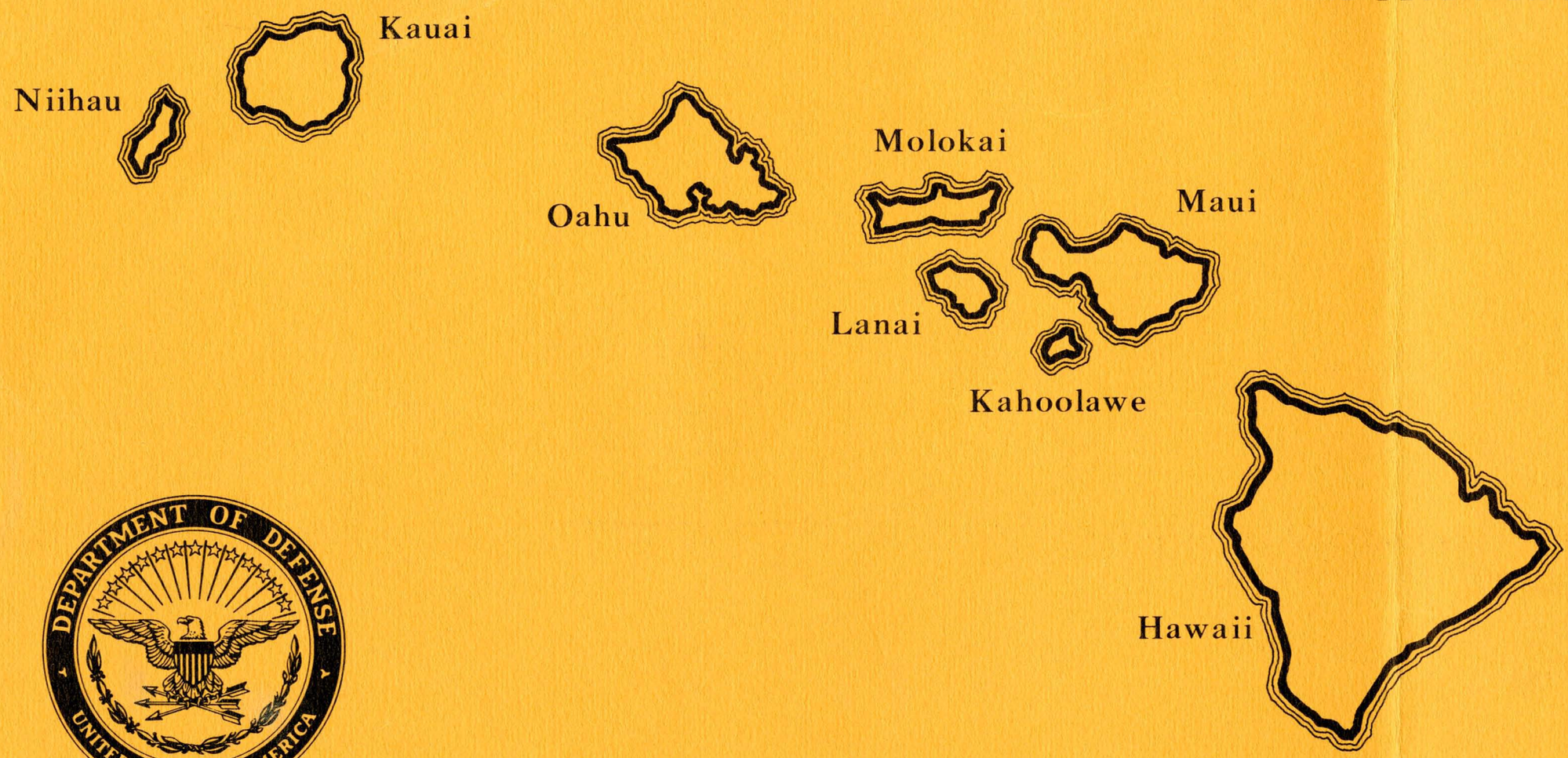
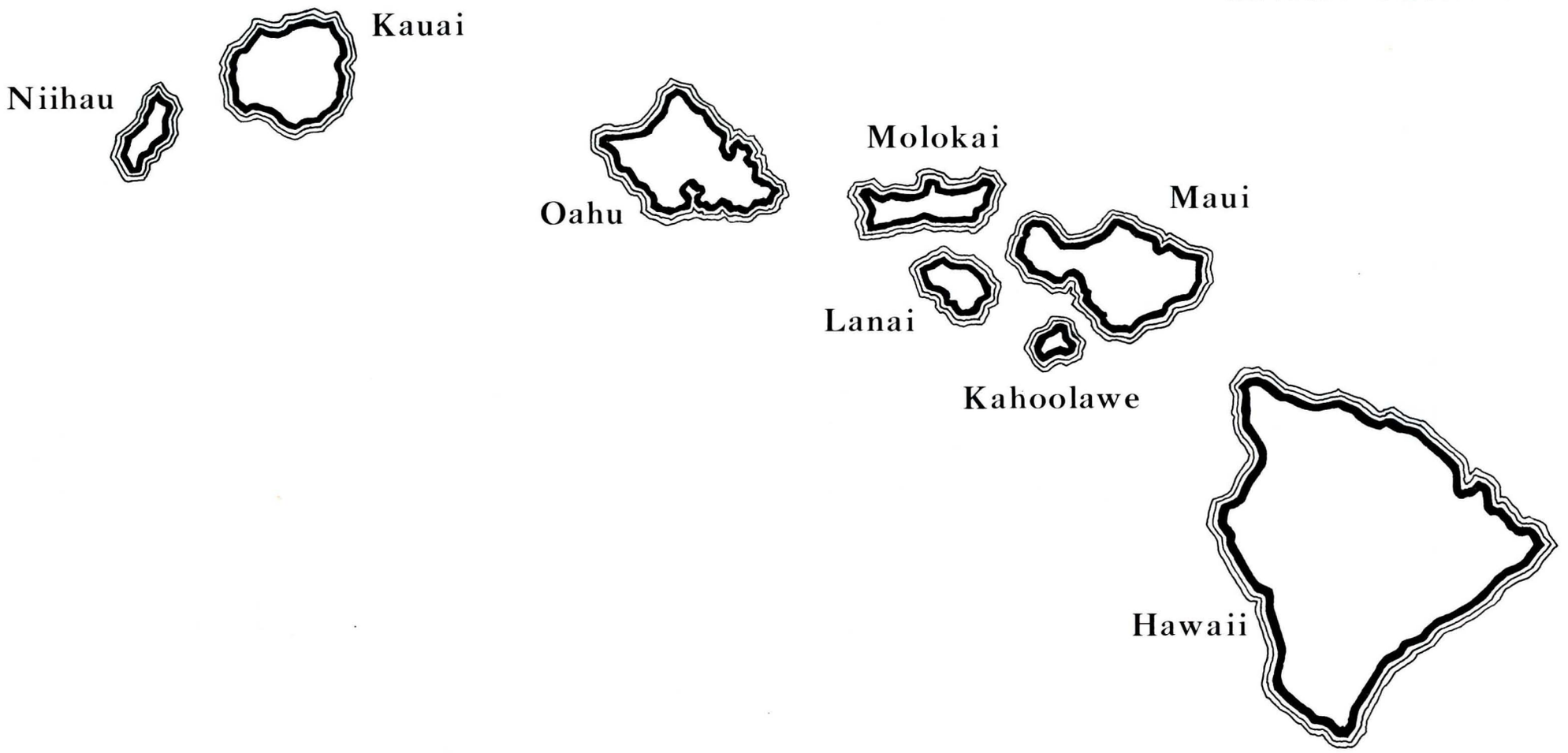


A PLAN FOR
DEPARTMENT OF DEFENSE FACILITIES

STATE OF HAWAII



JULY 1972

REVISED-DECEMBER 1972

A PLAN FOR DEPARTMENT OF DEFENSE FACILITIES

STATE OF HAWAII

TABLE OF CONTENTS

INDEX OF MAPS

INDEX OF CHARTS

EXECUTIVE SUMMARY

The purpose of this study is twofold:

- to determine landholdings required to support the long-range Department of Defense (DOD) presence in the State of Hawaii, and
- to determine which landholdings could be released by the Department of Defense in consonance with Executive Order 11508, issued by President Nixon in February 1970.

PRESENTATION

This book is the Long-Range Master Plan of the landholdings required to support the Department's long-range presence in Hawaii. This presentation also summarizes the study recommendations on the release of DOD landholdings, based on this Master Plan and on the Executive Order 11508 survey of DOD real property holdings in Hawaii.

The scarcity of land in the State to satisfy Department requirements, along with increasing needs of the civilian population, have created a critical need for coordinated land use planning.

The great majority of military facilities were constructed during World War II and the Korean Conflict. Construction sites were dictated by the locations of available land rather than optimum locations. Because of the decreasing land availability, this problem has continued to the present time. Also compounding the land use problem are a lack of integrated planning and construction efforts among the four Services.

The Department of Defense recognizes the need for a comprehensive and long-range planning analysis to determine long-range land requirements. A comprehensive land utilization review of DOD landholdings is the foundation for effecting highest and best use of these landholdings.

MASTER PLAN SUMMARY

The Master Plan is based on the projected force levels of the individual Services over the next 15 years. Long-range requirements were determined by translating projected numbers of ships, planes and men into minimum land areas required to: house, support and train the personnel; operate and maintain the various systems and equipment; store materials and supplies, and provide the environmental protection associated with various operations such as aviation, ammunition storage and electronic communications.

More than one-quarter of the State's population is directly dependent on defense expenditures. The Department of Defense is one of the major land users in the State of Hawaii; therefore, the military presence has a significant impact on the economic and social well-being of the local community.

Community attitudes toward this military presence are expressed in several ways, including statements from State and City & County Governments, from citizen's organizations and planning groups, from private business and from labor unions. These attitudes were analyzed and resultant community planning goals were considered in developing the PLAN. Some of the specific attitudes and goals included: locating military facilities away from lines of direct urban growth; consolidating and isolating objectionable facilities such as ammunition storage; preventing environmental degradation of lands used for training; continuing military provision for its own housing or providing land suitable for civilian-constructed housing; preserving and allowing civilian use of parks, beaches and recreation areas now in military use.

A list of locations was identified for long-range use by the military based on a comparison of the community planning analysis and a functional analysis of the land assets of each Service. A further analysis of each of these long-range locations was made to determine sites on which the various Service missions could be optimally performed and if existing usage reflected sound land use planning. A determination was also made on the potential for additional development and compatibility with the surrounding community for each location.

Chapter Five, "LONG-RANGE PLAN," presents the proposed long-range presence for the Department of Defense in the State of Hawaii, including the breakdown for each Service. Without sacrificing operational integrity, joint-use concepts of consolidation, centralization and collocation of functions were applied to the maximum. Major recommendations include: consolidation and collocation of all Service ammunition storage and communication facilities; centralization and consolidation of intra-Service warehousing facilities; joint-Service housing areas; and increased joint usage of training areas.

The PLAN identifies and recommends land transfer and joint-use actions involving the community. Major items in this category include civilian use of military land for: a civilian light plane airfield; expansion of a community college; piers and waterfront warehousing; commercial port development; and beach and recreation areas.

Actions which have been completed and are to be pursued by the Services for protection of the environment are noted. The Services will continue active participation with the community and will sponsor military programs for pollution abatement, open space preservation and land restoration.

The PLAN recommends that there be some means of joint civilian-military planning for Hawaii's future, and that this PLAN be the basis for continuing action coordinated among the Department of Defense and appropriate Federal, State and City & County planning organizations.

The total cost of satisfying all DOD facility deficits, including new and replacement construction and relocation costs associated with this 15-year LONG-RANGE PLAN, is estimated at $1.4 billion. The PLANNING ANALYSIS generally confirms that the facilities currently planned by the Services must still be constructed. The PLAN recommends locations for these facilities, based on an analysis of optimum land use.

The PLAN is intended as a general guideline for the Services to follow in their planning and programming to fill facility requirements. Projects developed by the Services should be evaluated on the basis of their compatibility with the PLAN.

Continuing planning effort will be required to update the PLAN periodically and to provide the detailed analyses required to implement individual proposals.

LAND USE SUMMARY

Current DOD Presence in the State of Hawaii:

Total number of DOD Installations and Facilities: 110

Total acreage of DOD Installations and Facilities:

Army	175,690 acres
Navy	55,121 acres
Air Force	5,893 acres
Marine Corps	48,261 acres
Total Acreage:	284,965 acres

Long-Range DOD Presence in the State of Hawaii:

Total number of DOD Installations and Facilities: 94

Total acreage of DOD Installations and Facilities:

Army	170,034 acres
Navy	54,433 acres*
Air Force	5,233 acres
Marine Corps	47,701 acres
Total Acreage:	277,401 acres

*Includes 1,918 acres to be acquired.

Recommendations for Release of DOD Landholdings:

	ARMY	NAVY	AF	MC	TOTAL	
Release Immediately	4,744	2,416	360	526	8,046	acres
Release Within 5 Years	912	190	300	34	1,436	acres
Total	5,656	2,606	660	560	9,482	acres

CHAPTER ONE

INTRODUCTION AND STUDY DEFINITION

THIS CHAPTER CONTAINS A GENERAL INTRODUCTION TO THE PLANNING EFFORT. SOME HISTORY IS DISCUSSED AND GENERAL DEFINITIONS AND GUIDELINES FOR THE STUDY ARE PRESENTED.

HISTORY OF THE PLANNING EFFORT

In August 1971, the Department of Defense announced that a comprehensive review would be made of all DOD real property holdings in the State of Hawaii. The study was designated Project FRESH (Facilities Requirements Evaluation, State of Hawaii). The Department of the Navy was designated Department of Defense agent for the study with support to be provided by all Army, Navy, Air Force and Marine Corps Commands located in Hawaii. The Hawaii-based Pacific Division, Naval Facilities Engineering Command, was tasked as the local Defense Agency for Project supervision. A Study Group, composed of professional planners, real property managers and military service representatives, was formed to conduct the study and consolidate the findings into a report to DOD. The Study Group began work on 11 October 1971 with a deadline of 40 weeks, or mid-July 1972, for completion of final reports and submittal to the Assistant Secretary of Defense (Installations and Logistics). The Study Team received its guidance directly from a project-appointed Department of Defense Steering Committee. Weekly progress reviews were held with representatives of the Commander in Chief Pacific (CINCPAC) and the Service Commanders in Chief (CINCs) in Hawaii.

PURPOSES OF THE PLAN

The purposes of this PLAN are to determine the long-range (15 years) landholdings required to support the Department of Defense in Hawaii and to outline how this objective is to be achieved. Because the PLAN incorporates the needs of all DOD agencies in Hawaii, it acknowledges joint usage of land as well as inter/intra-Service consolidations which permit effective and efficient use of real property resources. Goals are established in order to assist the Services in initiating implementing actions. The PLAN is designed to allow periodic updating so that changing requirements may be incorporated into the PLAN.

As a major land user and the major employer in Hawaii, the Department of Defense has a significant impact on the Hawaiian Community. The scarcity of available land in the State to satisfy increasing needs for the continually developing population has created a need for sound and coordinated land use practices and planning. The island environment imposes different and more stringent land use and planning parameters than the relatively unrestricted continental land mass. The Department of Defense has long recognized the continuing need for optimum land use and has, through the individual Services, pursued formalized planning as a necessary step to satisfy the defense requirements of the United States. However, recent focus of attention on the problem of land availability in the insular State of Hawaii led the Department of Defense toward the development of a comprehensive joint plan for all DOD activities in Hawaii.

This PLAN will provide a significant input to the local community to assist in the development of long-range community plans. This PLAN and land utilization review is responsive to Executive Order 11508, issued by President Nixon in February 1970, which requires all Federal agencies to achieve greater efficiency in the use of Federal land resources throughout the country.

STUDY DEFINITION AND BASIS

The PLAN is for the long range and represents the desired land use goal for the Department of Defense. It is based on foreseeable requirements over the next 15 years. Since these requirements may change with changing national and defense policies and objectives, this PLAN is designed to be flexible and responsive to changing needs. The study has considered:

- projected force levels to be stationed in Hawaii,
- the facility requirements to support these force levels,
- military and dependent housing needs,
- current and future uses of all existing bases, and
- consolidation or joint use of military facilities.

The study sought to provide needed defense facilities in a manner that is compatible with goals and plans of the general community. A methodology was developed and used that would ensure military operational integrity but, at the same time, give full consideration to civilian community needs. Although this PLAN is meant to be conceptual in nature, all conclusions were studied in depth to demonstrate their feasibility. The proposed relocations, consolidations and exchanges will require additional detailed study prior to implementation.

The data collection and processing system used in the study allows for economical updating on a periodic basis.

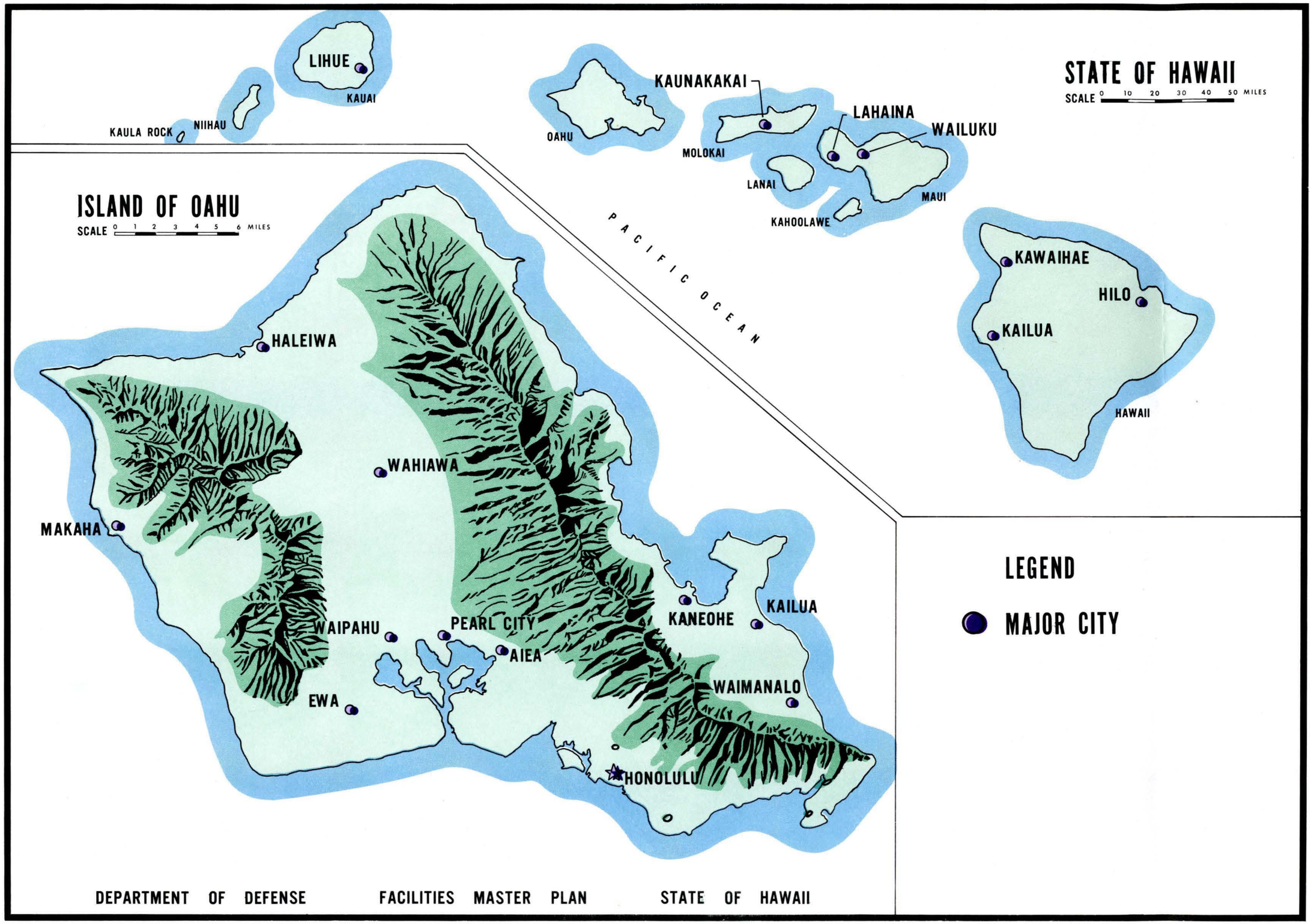
COMPOSITION OF THE BOOK

This book is a general summary of the planning conclusions reached as a result of the PLAN study. The elements of the PLAN are treated in abbreviated fashion to allow for quick reading. They are based, however, upon a specific detailed analysis of each military installation and facility in the State of Hawaii.

STUDY AREA

The area included in this study, as shown on the map on the facing page, consists of all major islands in the State of Hawaii: Oahu, Hawaii, Kauai, Maui, Molokai, Kahoolawe, Lanai and Niihau (including Kaula Rock). All but Lanai and Niihau have a Department of Defense presence. The island of Oahu, on which Honolulu, the State Capital, is located, is the economic and population center of the State. Likewise, the majority of DOD landholdings and military activities are concentrated on the island of Oahu.

STUDY AREA


LIHUE
KAUAI
KAULA ROCK
NIIHAU
OAHU
KAUNAKAKAI
MOLOKAI
LAHAINA
WAILUKU
LANAI
MAUI
KAHOOLAWE
STATE OF HAWAII
SCALE 0 10 20 30 40 50 MILES
ISLAND OF OAHU
SCALE 0 1 2 3 4 5 6 MILES
PACIFIC OCEAN
KAWAIHAE
HILO
KAILUA
HAWAII
HALEIWA
WAHIAWA
MAKAHA
WAIPAHU
PEARL CITY
AIEA
EWA
KANEOHE
KAILUA
WAIMANALO
HONOLULU
LEGEND
MAJOR CITY
DEPARTMENT OF DEFENSE
FACILITIES MASTER PLAN
STATE OF HAWAII

NOTES

CHAPTER TWO
FACILITY REQUIREMENTS

THIS CHAPTER CONTAINS A GENERAL DISCUSSION OF FACILITY REQUIREMENTS, AND SERVICE-BY-SERVICE ANALYSES OF THE REQUIREMENTS. THE PURPOSE OF THIS CHAPTER IS TO IDENTIFY THE MAGNITUDE AND NATURE OF THE DEPARTMENT'S FACILITY REQUIREMENTS.

FACILITY REQUIREMENTS -- COMPOSITE

Based on mission statements and force level data pertinent to each Service, long-range (15 year) requirements for acreage in nine basic, all-inclusive land use categories were developed. Planning factors developed from DOD Construction Criteria were used to translate numbers of ships, planes and men into minimum land areas required to: house, support and train the personnel; operate and maintain the various systems and equipment; store the materials and supplies; and provide the environmental protection associated with various operations such as aviation, ammunition storage and electronic communications. These requirements are general in application and are considered the minimum for like missions at any U. S. military location in the world.

Requirements, as calculated, are gross requirements and include all ancillary facilities such as streets, parking, open spaces, etc. In some cases certain specific uses, not common to all categories, were added to the gross figures. These are detailed below.

COMPOSITE ACREAGE REQUIREMENT

The chart on page 11 indicates the composite land use requirements for all military activities in Hawaii by land use category. Detailed definitions and discussions of each land use category follow:

RESIDENTIAL. This category includes all types of residential spaces such as family housing, bachelor officer quarters and bachelor enlisted quarters. Included in the gross calculations are certain recreational facilities such as tot lots, which are considered integral parts of family housing areas. Land used for family housing purposes will contain six enlisted units or five officer units per gross acre (DOD criteria does not provide for high-rise developments). If land is used for bachelor quarters, a three-story enlisted men's dormitory for 100 men will occupy 0.78 acres. A three-story building for 100 bachelor officers will occupy 1.06 acres. Most bachelor quarters are three-story buildings.

COMMUNITY SUPPORT. Included in this category are all morale, welfare, recreational, community and medical facilities required to support military personnel and their dependents. To establish a planning factor for community support it was necessary to review all types of community support facilities provided at military installations for servicemen and their dependents. A composite factor of one acre per 100 men provides space for community support needs except golf courses, skeet ranges or riding academies.

ADMINISTRATIVE. Only administrative facilities with extensive parking are included in this category. Although the 600 acre requirement is the smallest of the nine, it should be considered as a separate land use

category because it includes many important Headquarters functions. Administration functions are normally housed in one-, two-, or three-story buildings. Parking spaces are provided for 50% of the building occupants and open space is provided for minimal landscaping. Existing facilities occupy approximately 515 square feet of land per man. This includes 160 square feet of building space per man plus 355 square feet for parking, landscaping and adjacent streets.

LIGHT INDUSTRIAL. All of the inoffensive industrial function or related activities are included in this category. These include: public works/post engineer facilities; warehousing; research, development and testing facilities; and utility uses. Warehouses are principally one-story buildings with 50-foot separation for fire protection. The land requirement is approximately double the net square footage of warehouse space. Two acres for open storage, 1.4 acres for base maintenance and 1.7 acres for other maintenance functions (other than aviation maintenance) are required for each 1,000 men of the base complement.

HEAVY INDUSTRIAL. This category consists of those industrial functions which are less desirable as neighbors than those in the category above. They may be noisy, odoriferous, dangerous, or aesthetically unpleasing, or may require extensive movements of raw materials and/or products. Two of the larger components of this category are the shipyard facilities and petroleum, oil and lubricants (POL) unloading and storage facilities. Land requirements are based on POL storage which uses 5.7 acres for a 50,000 bbl tank; ship berthing which uses 1.5 acres per berth and the land requirements of the Pearl Harbor Naval Shipyard.

AMMUNITION STORAGE. The actual storage space needed for ammunition and explosives is small compared to the total requirement of 16,200 acres shown on the chart. However, space requirements must include an area surrounding each magazine for safety clearance in the event of an accidental explosion. Appropriate clear space based on the explosive cargo capacity of ships involved must be maintained around ammunition wharfs where explosives are loaded and unloaded. It is primarily this requirement for blast clearance zones which makes ammunition storage the second largest of the land use requirements.

AIRFIELD OPERATIONS. This category includes a number of different facilities, each of which is an integral part of any military airfield. These

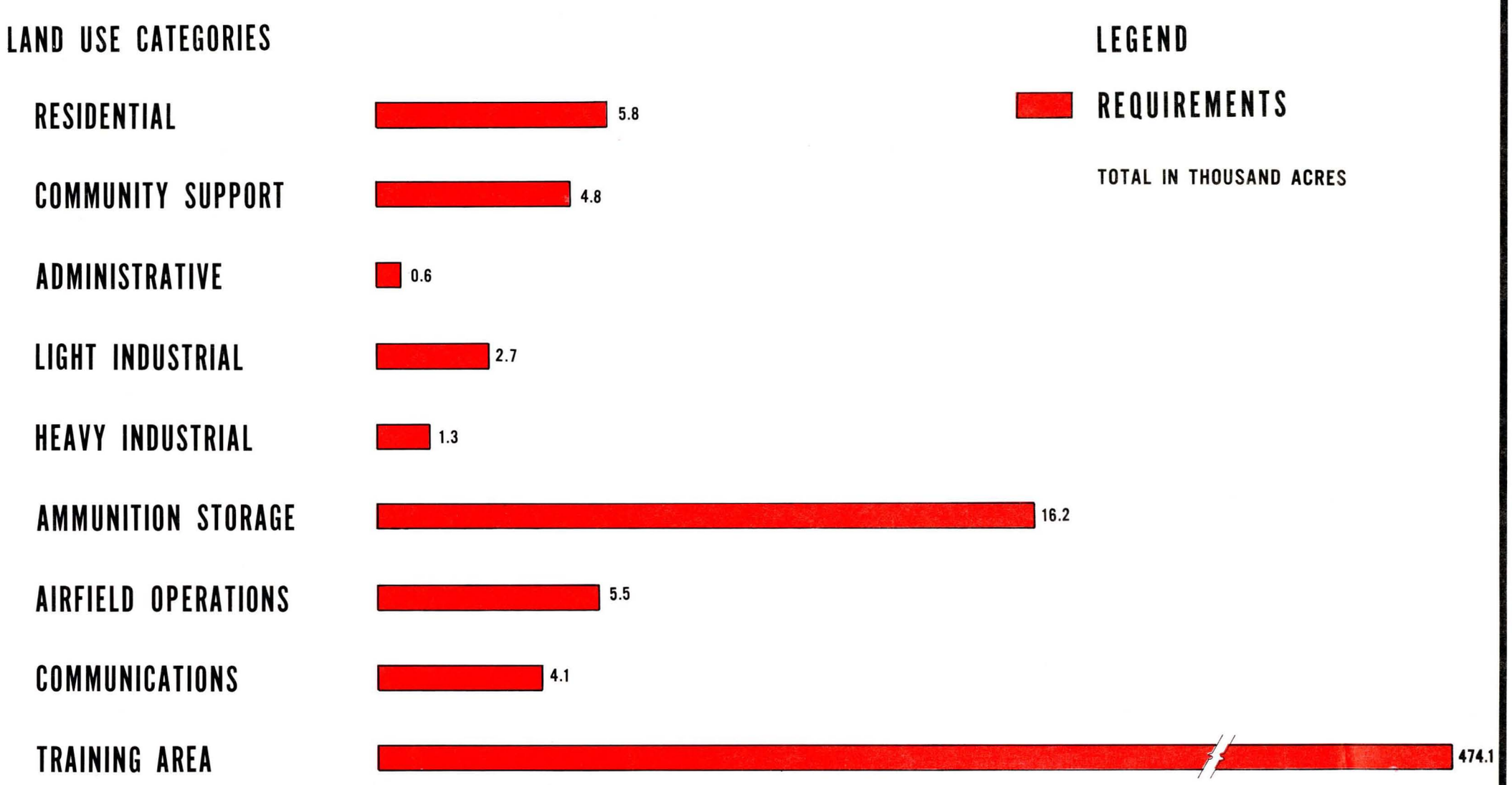
fall into the two general subcategories of pavements (runways, taxiways, aprons, etc.) and structures (control towers, hangars, operations buildings, etc.). One primary runway with an operating length of 10,000 feet requires 740 acres of land. Overrun areas 1,000 feet long plus clear zones 2,000 feet long must be provided at each end of the runway and lateral clearance zones extending 1,000 feet from the center line of the runway must be provided. Outside of the lateral clearance zones are transition zones which slope upward at the rate of one foot vertical for each seven feet horizontal. Thus, a structure 50 feet in height must be at least 1,350 feet from the runway center line (1,000′ + 7 times 50′). Dual runways will require proportionately larger areas. Existing conditions preclude application of all of the DOD Air Installation Compatibility Use Zone (AICUZ) principles which would provide a one-mile clearance on each side of the runway and two-and-one-half-mile clearance on each end of the runway. Based on the number, type and function of the aircraft assigned to Hawaii, application of the above criteria shows that 5,500 acres are required to support DOD air operations in Hawaii.

COMMUNICATIONS. The largest portion of this category is comprised of acreage for antenna fields. Desirable clearance requirements for receiver sites would prohibit inhabited structures within one mile of the antennas. High voltage power lines should not be within two miles nor radio transmitters closer than five miles. A receiver station having antenna fields occupying approximately one square mile would have to be 16,280 acres in size to ensure that there were no high voltage lines within two miles of the antennas. The land requirements included for a transmitter station include only the essential space required for the antenna fields. A clear space or buffer zone around the antenna field is desirable to prevent interference with the radios and television sets of home owners. The Military Services construct facilities inside the desired clearance lines. This is possible only because the Services can control the type of appliances and electrical equipment used by Service personnel. They could not control the use of equipment such as welders or ham radios by neighboring civilians. Also included in this land-use category are all other buildings and structures associated with communications.

TRAINING. The 474,100 acre requirement includes the areas required by the Army and Marine Corps for troop training, as well as the large land area which would be required by the Marine Corps and Navy for an aircraft bombing and ship to shore bombardment area. For close air support/combat training, an area 12 x 20 nautical miles or about 204,000 acres is required in order to provide adequate safety zones. Although the Navy and the Marine Corps each has a requirement for a bombing range, it is practicable for one range to be used by both Services. Therefore, the acreage requirement for training facilities includes only one bombing range. An Army Infantry Division requires approximately 190,000 acres including one cantonment area (2,000 acres), miscellaneous activities (1,000 acres), field exercise area (47,000 acres), and firing and impact area (140,000 acres). The entire area should be of varied terrain to permit realistic training activities. A Marine Brigade requires a smaller total area for ground combat maneuvers, but a suitable area for amphibious landings must be included.

FACILITY REQUIREMENTS

COMPOSITE



TOTAL REQUIREMENTS: 515.1 THOUSAND ACRES

FACILITY REQUIREMENTS -- ARMY

MISSION STATEMENT

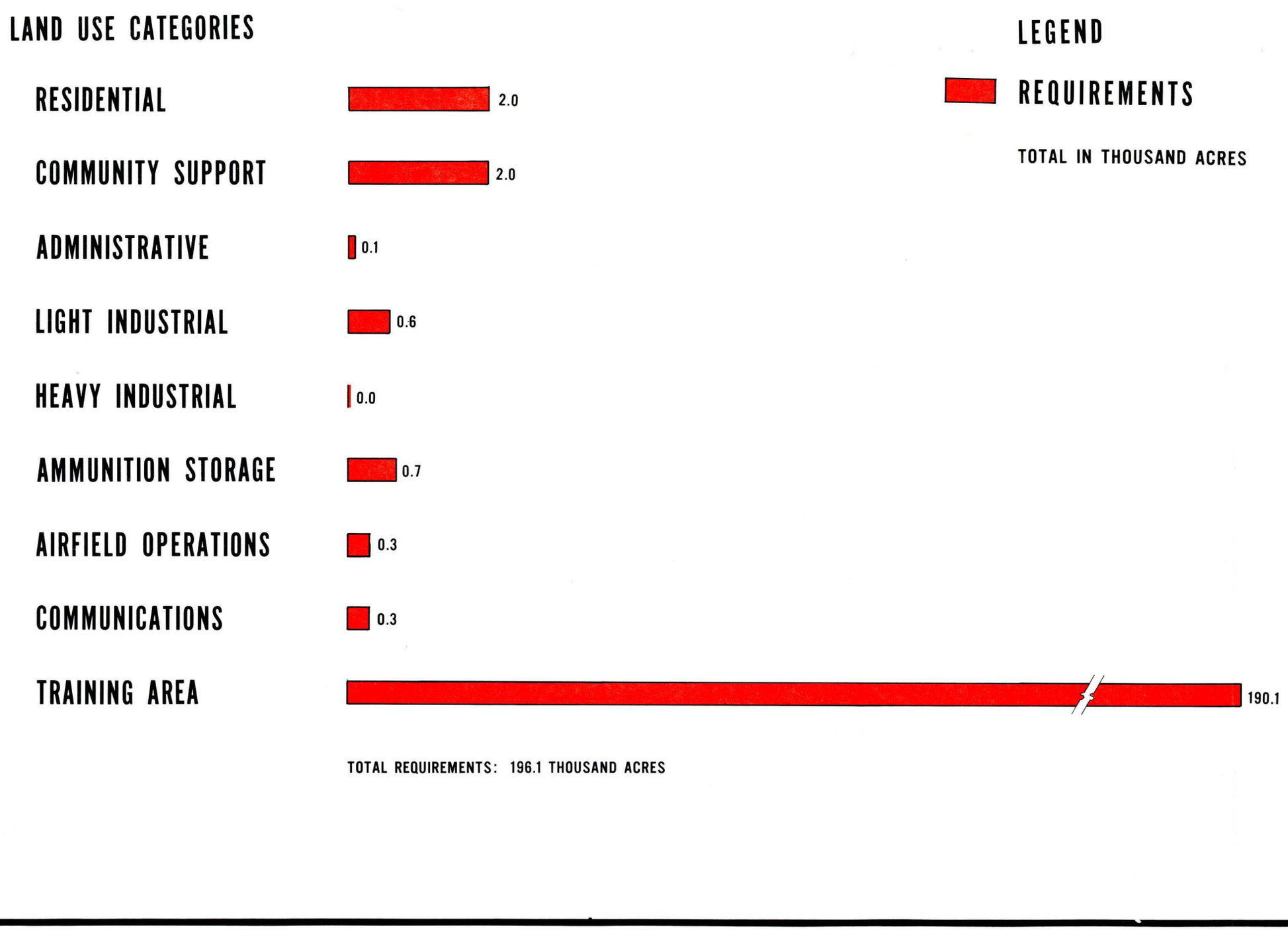
The mission of the Army in Hawaii is to maintain three principal echelons of command: a theater Army Headquarters, an Infantry Division and an Army Support Command. Most of the remaining Army activities are related to each of these command echelons. The largest Army unit in terms of land and personnel requirements is the Infantry Division with organic air support. This Division is assigned to Hawaii as part of the Joint Chiefs of Staff worldwide plan for locations of major combat units. The Division engages in full time training activities to insure its readiness for rapid deployment in the Pacific. U. S. Army Support Command, Hawaii provides facilities in support of the Division and other Army activities assigned to Hawaii. U. S. Army, Pacific (USARPAC) is a theater Army level Command and is the Army Component Command responsible to the Commander in Chief Pacific (CINCPAC) for Army matters in each subcommand in the Pacific. These include: U. S. Army, Vietnam; U. S. Army, Korea; and U. S. Army, Japan. A separate subcommand of Headquarters USARPAC is Tripler Army Medical Center (TAMC). TAMC is an Army medical teaching center and operates Tripler General Hospital to provide medical care to active duty and retired personnel of all Services in Hawaii. TAMC is a key element of medical service plans and programs throughout the Pacific. Also located in Hawaii are the Strategic Communications Command, Pacific and the Army Security Agency, Pacific.

REQUIREMENTS

It is readily apparent from the facing chart that training represents the Army's greatest land requirement (190,000 acres). This extensive requirement includes: troop maneuver areas for various size units; firing ranges for small arms and crew-served weapons, including explosive impact areas and safety zones associated with the ranges; and many smaller training areas and facilities required to adequately train a modern infantry division which contains combat, combat support and combat service support units of many different types. Community support requirements of 2,000 acres and residential requirements of 2,000 acres rank as the next largest land use categories. The remaining categories, representing industrial/hardware-oriented activities, have relatively smaller requirements.

FACILITY REQUIREMENTS

ARMY



FACILITY REQUIREMENTS -- NAVY

MISSION STATEMENT

The mission of the Navy in Hawaii is to command all Naval Forces in the Pacific and to maintain a central Pacific support base for the operating forces of the U. S. Pacific Fleet. The Commander in Chief of all Naval air forces, ships and submarines in the Pacific Ocean is located at Pearl Harbor. Other major command headquarters in Hawaii include the Commanders of the Antisubmarine Warfare Force, Submarine Force, Service Force, Fleet Air Hawaii, and Hawaiian Sea Frontier. The Commandant, Fourteenth Naval District is the area coordinator for logistical support of 100 Naval shore organizations located in Hawaii and the fleet units.

Hawaii contains the waterfront and airfield facilities for the homeporting of over 70 ships and seven air squadrons. Major logistical functions to support the ships, aircraft and personnel include ammunition, supply and POL storage, communications, repair and refueling, training, research and development, housing, and community support.

REQUIREMENTS

The Navy's largest land requirement is for a target complex for aerial bombing and strafing, shore bombardment, and close air support training using inert and live ordnance. A live ordnance impact area for close air support training is the largest type of range. It requires restricted air space with a minimum radius of 25 nautical miles (1,666,500 acres). A rectangular surface-impact area 12 x 20 nautical miles (204,000 acres) is at the center of the restricted area.

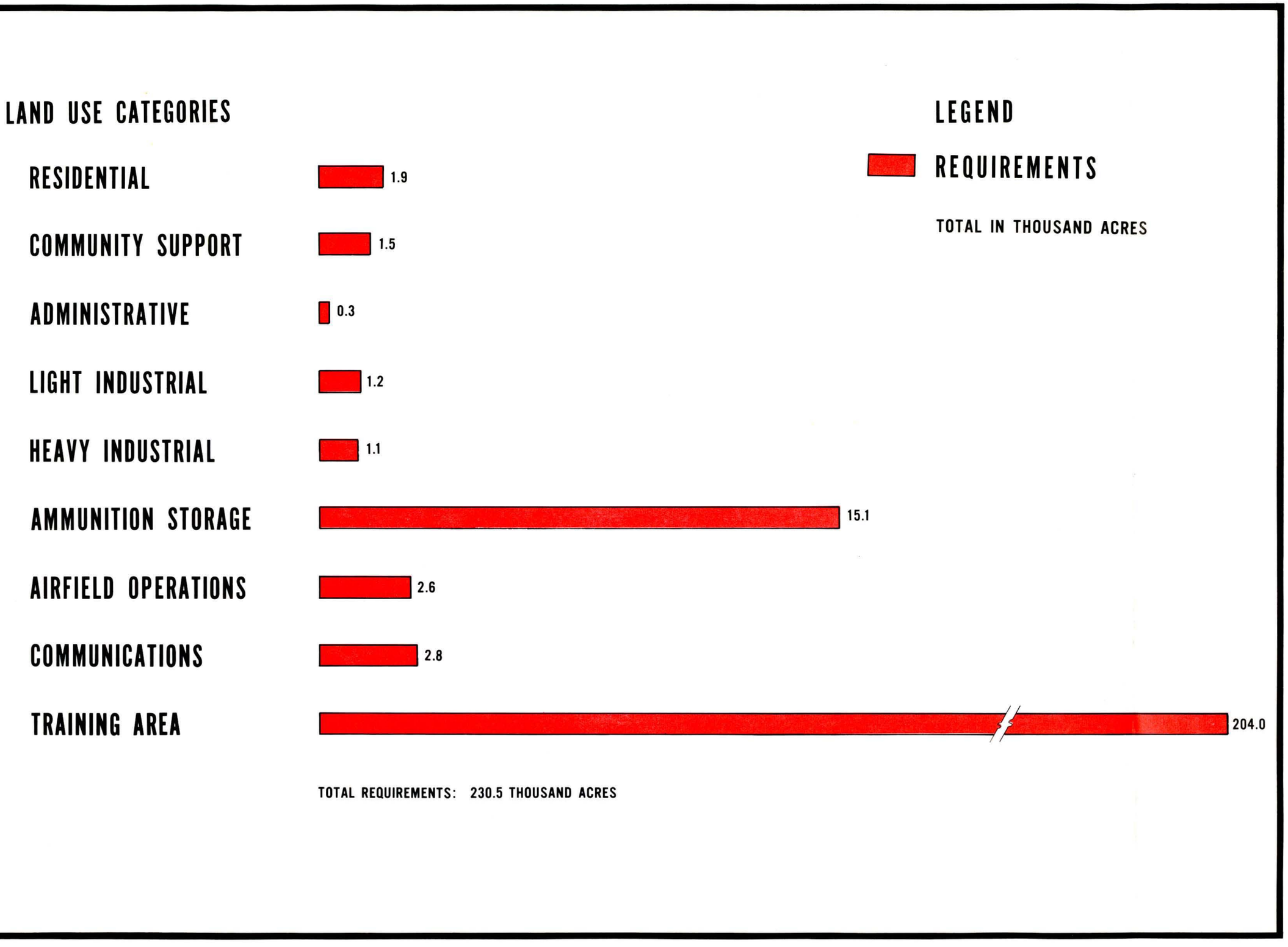
Through coordination of training schedules, it is possible to incorporate all other types of targets needed for training within one live ordnance impact area.

Ammunition handling and storage is the second largest requirement at 15,100 acres. As noted in the Composite section of this chapter, much of this requirement consists of blast clearance safety zones which surround explosive storage areas and handling points.

The third and fourth largest categories of acreage required are for hardware-oriented functions of communications (2,800 acres) and airfield operations (2,600 acres). The Navy's two industrial land uses, although relatively low in acreage requirements, are the largest in these categories among the four Services. This reflects the level of logistical and maintenance support provided to the Pacific Fleet through the functions of the Naval Supply Center and the Naval Shipyard.

FACILITY REQUIREMENTS

NAVY



FACILITY REQUIREMENTS--AIR FORCE

MISSION STATEMENT

The Air Force mission in Hawaii is to command all Air Forces in the Pacific and to provide logistical and tactical support for all Air Force elements stationed in or transiting the Pacific area through Hawaii. The command center for the Pacific Air Forces (PACAF) is located at Hickam Air Force Base. The Command function requires a vast communications system, missile tracking system, and information gathering network to support the air operations in the Pacific area.

In addition, nine other major Air Force Commands are represented in Hawaii: USAF and Headquarters Command, Air Force Systems Command, Strategic Air Command, Air Force Logistics Command, Tactical Air Command, Air Training Command, Military Airlift Command, Aerospace Defense Command, and the Air Force Communications Service.

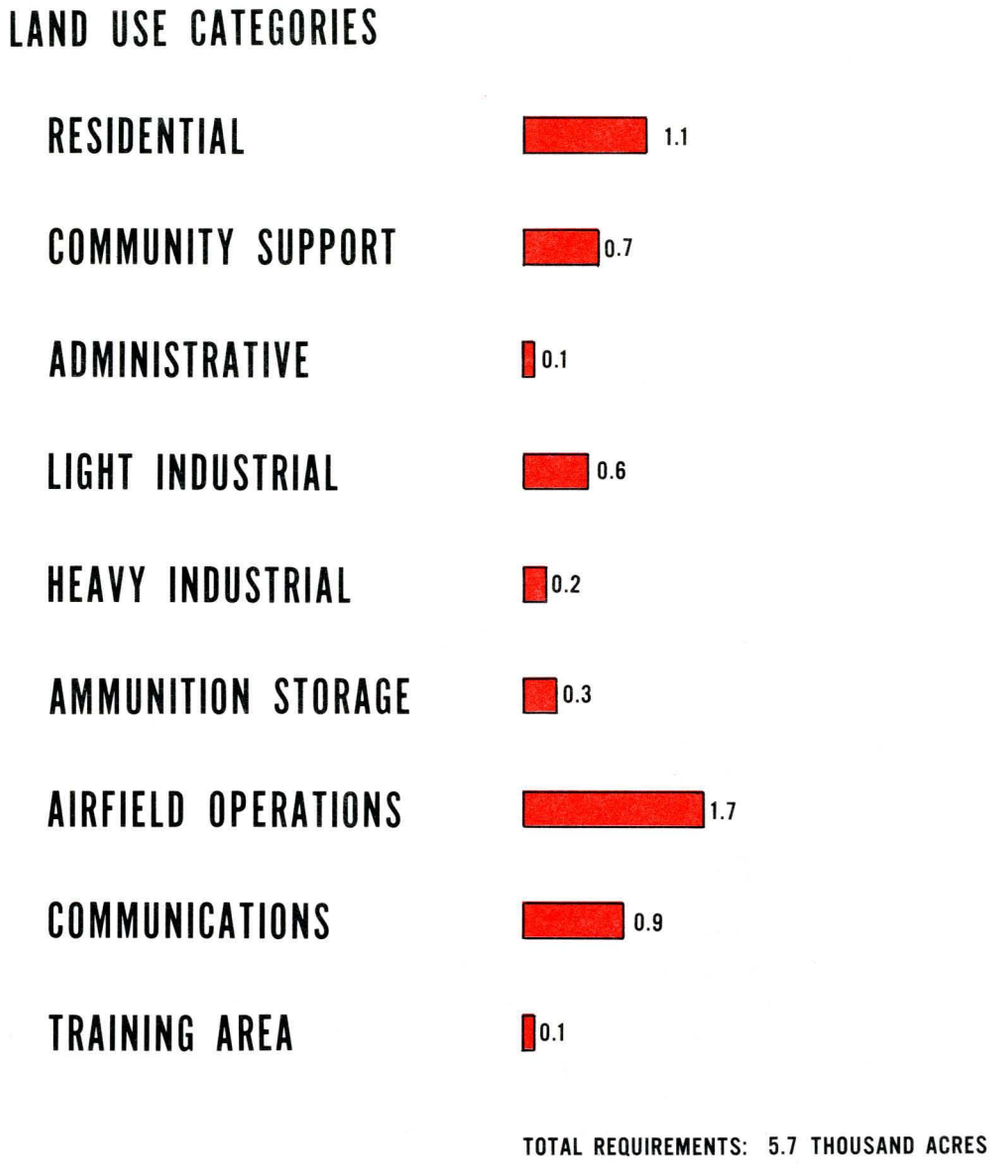
There are 189 separate Air Force organizations in Hawaii. The 15th Air Base Wing is the host Air Force organization which provides services and support to the tenant organizations.

The Military Airlift Command (MAC) is the primary user of airfield and related facilities in support of the Air Force logistics mission.

The Hawaii Air National Guard and the Army also fly missions at Air Force installations. Major functions of the Air Force in Hawaii are airfield operations, aircraft maintenance, defense communications, troop and family housing, administration and community support.

REQUIREMENTS

Of the four Services, the Air Force has requirements which are most balanced among the various categories. The Air Force has no major requirement for ground combat or air-to-ground bombardment training; accordingly, land area for training is the smallest of the nine categories. Limited air-to-ground training requirements of the Air Force are accommodated at existing Service ranges. Two of the three largest functions are airfield operations (1,700 acres) and communications (900 acres), which indicate that the Air Force's primary mission is in support of air operations rather than personnel training or support.


LAND USE CATEGORIES
RESIDENTIAL
1.1
COMMUNITY SUPPORT
0.7
ADMINISTRATIVE
0.1
LIGHT INDUSTRIAL
0.6
HEAVY INDUSTRIAL
0.2
AMMUNITION STORAGE
0.3
AIRFIELD OPERATIONS
1.7
COMMUNICATIONS
0.9
TRAINING AREA
0.1
TOTAL REQUIREMENTS: 5.7 THOUSAND ACRES


LEGEND
REQUIREMENTS
TOTAL IN THOUSAND ACRES

FACILITY REQUIREMENTS -- MARINE CORPS

MISSION STATEMENT

The Marine Corps mission in Hawaii is to command all Marine Corps units in the Pacific, maintain a Marine Brigade in readiness, and provide security at Naval installations in Hawaii. Marine Corps commands in Hawaii are: Commanding General, Fleet Marine Force, Pacific; Commander, Marine Corps Bases, Pacific; First Marine Brigade; Marine Corps Air Station, Kaneohe; and the Marine Barracks at Pearl Harbor.

Commanding General, Fleet Marine Force, Pacific directs and controls administration, training, readiness, and employment of the Fleet Marine Force, Pacific in support of the Commandant, Marine Corps and CINCPAC. He is principal advisor to CINCPACFLT on Fleet Marine Force matters.

Commander, Marine Corps Bases, Pacific commands all Marine Corps shore (field) activities in the Middle and Western Pacific, and supervises the support provided by the Marine Corps to other agencies within the Department of Defense.

The Commanding General of the First Marine Brigade maintains units in readiness to provide ground and aviation elements for the defense of the Hawaiian Islands or for deployment to other areas.

Marine Corps Air Station, Kaneohe is the host activity for Marine Corps units stationed at MCAS Kaneohe.

The Marine Barracks, Pearl Harbor, provides security for the Pearl Harbor complex.

There are Marine Corps security detachments at several of the Navy activities in Hawaii.

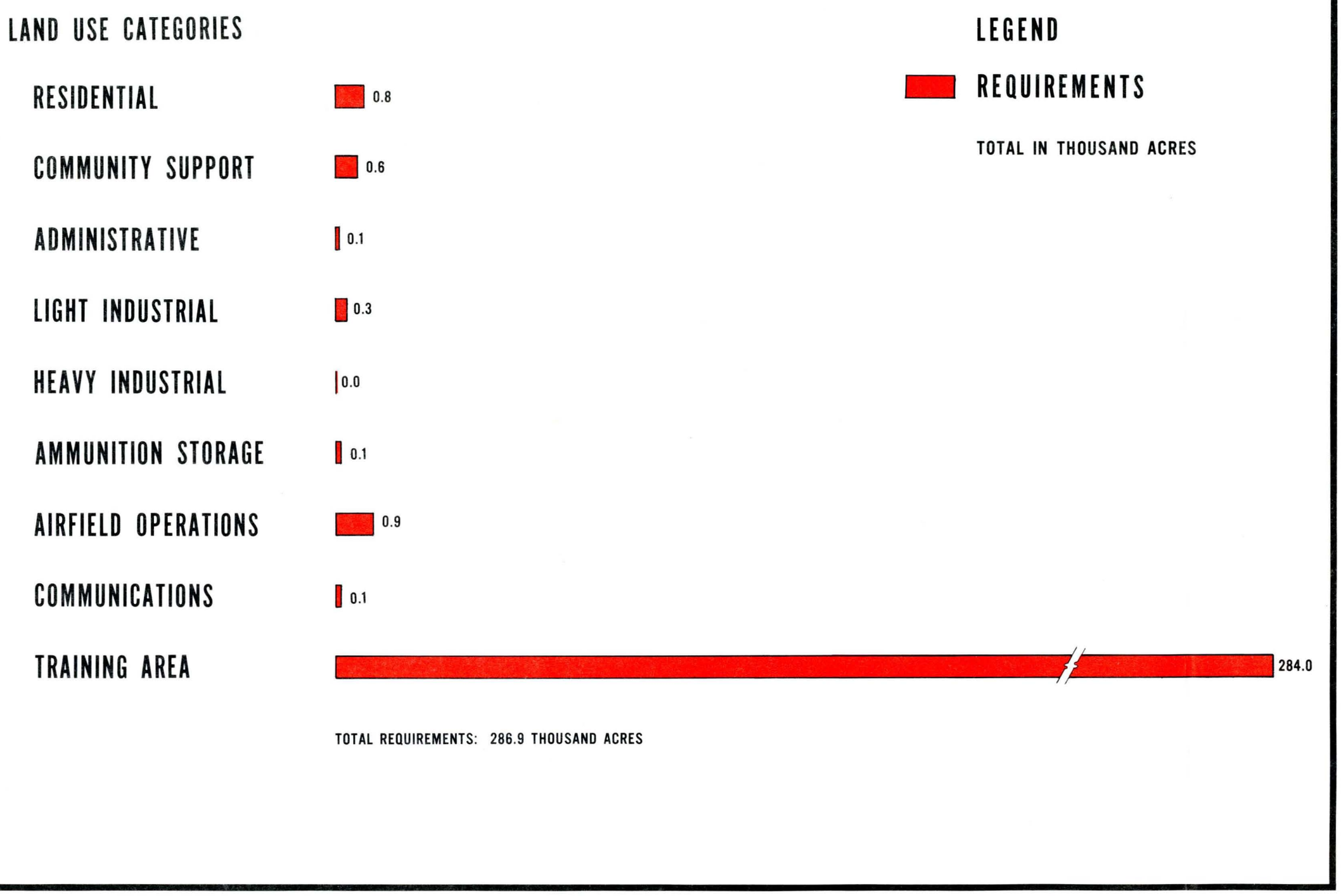
REQUIREMENTS

As with the Army and Navy, Marine Corps training needs dominate land use with a requirement for 284,000 acres. Because the Marine Corps mission is to support both an infantry unit and a Marine air group, extensive training areas suitable for ground and air units are required. It should be noted that close air support training areas of 204,000 acres are shown as requirements for both the Navy and the Marine Corps; however, only a single requirement is entered in the composite as one training area fulfills the requirements of both Services. About 80,000 acres are needed for ground combat, troop maneuver and live firing areas. Also included in the training category is the special Marine requirement for approximately 3,300 yards of beach frontage for amphibious training operations.

The airfield operations requirement of 900 acres is the second largest land use, followed by residential and community support categories at 800 acres and 600 acres respectively.

FACILITY REQUIREMENTS

MARINE CORPS



NOTES

CHAPTER THREE
EXISTING CONDITIONS

THIS CHAPTER CONTAINS DATA ON ALL SITES PRESENTLY OCCUPIED BY THE DEPARTMENT OF DEFENSE IN THE STATE OF HAWAII. ALSO INCLUDED ARE FUNCTIONAL ANALYSES OF THE VARIOUS LOCATIONS TO DETERMINE WHICH SITES CAN BEST SATISFY LONG-TERM FACILITY REQUIREMENTS.

LOCATION OF EXISTING FACILITIES

The map on page 25 depicts the locations of all existing Department of Defense installations and facilities in Hawaii. The locations are color keyed to indicate the Service in control of the land. The geographical boundaries of large facilities are shown. The locations of small facilities are indicated by circles. Lands held in fee simple and ceded land are identified by solid colors. Leased lands are identified by dashed lines on the boundaries.

There are 110 installations and facilities shown on this map which comprise a total area of 284,965 acres; 41% of the acreage is on the Island of Hawaii, 33% on Oahu, 10% on Kahoolawe, 9% on Molokai, and 7% on Kauai.

LANDHOLDING SUMMARY

During World War II, the Military Services used almost 650,000 acres in the Hawaiian Islands. Subsequently, the landholdings have been reduced to the present total of 284,965 acres. Most of the sites released since World War II were leased areas. However, significant parcels owned in fee or held as ceded lands have also been released. Approximately 10,000 acres of fee and ceded lands in prime developable areas have been released for public use since World War II. Some of the more significant examples are:

- Several large civilian housing developments in the Pearl Harbor area—former Navy land.
- Hawaii Housing Authority low income housing along Kam Highway across from Richardson Recreation Center—former Navy land.
- The site of the Oahu Stadium (currently under construction)—former Navy land.
- Honolulu Waterfront land contiguous to the Army's Kapalama Warehouse area and Fort Armstrong—former Army land.
- Waipio Golf Course—former Navy land.
- Beach areas at Lualualei and Waianae Kai—former Army land.
- Sand Island—former Army land.
- Sherwood Forest Recreation Area—contiguous to Bellows Air Force Station—former Air Force land.
- The former Naval Air Station on Maui.
- Portions of the Honolulu International Airport—former Air Force and Navy land.

Of the 4.1 million acres in the State of Hawaii, DOD activities presently own in fee simple or hold as ceded land approximately 168,000 acres (4.1%). Including leases, permits, easements and license, DOD activities presently use about 7% of all lands in the State of Hawaii. On the Island of Oahu, which is of primary concern in this study, DOD agencies own or hold as ceded land approximately 14% of the land area. For comparison, the State controls about 15% and 17 large private estate and landholders own approximately 58%. The largest land owner is Bishop Estate which owns 16% of the Island of Oahu followed by Campbell Estate which owns a little over 13% of the Island of Oahu.

BEACHES

The State of Hawaii has 934.4 miles of coastline of which 184.9 miles are sandy beaches. The Island of Oahu has 48.7 miles of high quality beaches. The State Department of Planning and Economic Development provides the following breakdown of beach land:

	MILES	PERCENT
Total Beaches	48.7	100
Urban	6.7	13.8
Resort	2.0	4.2
Military	7.4	15.2
Public Park	11.1	22.7
Quasi Public Park (Not defined)	2.1	4.4
Agriculture, Conservation and Open Land	19.4	39.7

A breakdown of DOD controlled beaches is shown in the table. Primary beaches are those that can be used all year. Secondary beaches are those that are occasionally not usable as a result of rough water.

DOD CONTROLLED BEACHES

SERVICE	MILES OF PRIMARY	MILES OF SECONDARY	MILES TOTAL	ACCESS
ARMY	0.3	1.1	1.4	YES
NAVY	1.3	0.1	1.4	NO
AIR FORCE	1.4	2.0	3.4	LIMITED*
MARINES	-	1.2	1.2	NO
TOTAL	3.0	4.4	7.4	

*Access to a portion of the 1.4 miles of primary beach at Bellows AFS is allowed on Weekends only.

LANDHOLDING CLASSIFICATION

The charts on this page and the map on the facing page show the three types of military landholdings in Hawaii: (1) owned in fee simple, (2) held as ceded land, and (3) held under lease. The largest landholding is ceded land with 143,713 acres. Ceded lands are owned by the State but are held for use by the military under Presidential or Gubernatorial Executive Orders issued pursuant to the Hawaii Organic Act. These lands will revert directly to the State should DOD have no further use for them. After ceded lands, leased lands are the next largest holding with 116,652 acres, or 40% of the total. The amount of land owned in fee simple (24,600 acres, or 8.6% of the total) is small compared to the other categories.

The proportion, by Service, of the landholdings in the three categories is apparent on the charts. It is significant to note the small amount of land owned in fee simple by each Service. Although not apparent on the map, about 70% of military land consists of forest reserve, lava fields and mountainous areas which are unsuitable for agriculture or urban development. The military uses of most of these areas are nonexclusive, since the activities are either intermittent or do not conflict with nonmilitary uses such as hunting, forest reserve, watershed, or agriculture.

OUTLEASES

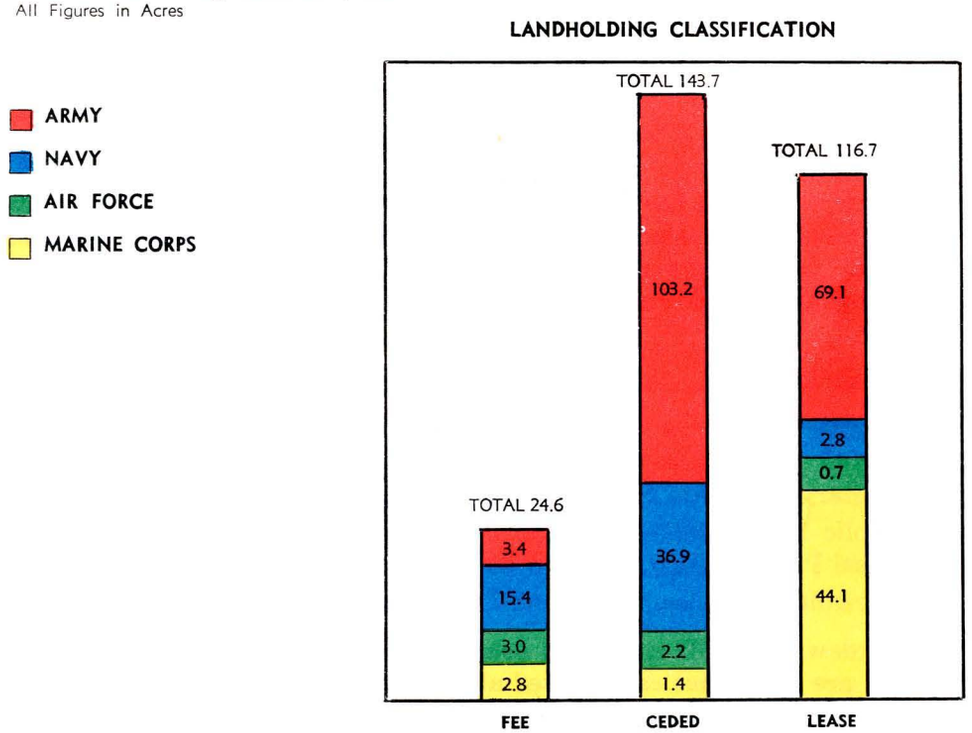
The military services have a program for outleasing landholdings where possible for agricultural purposes and other uses. The numbers of outleases and the acreages involved are shown in the table.

SERVICE	OUTLEASES	ACRES
ARMY	15	649
NAVY	43	5,843
AIR FORCE	13	1,152
MARINES	2	14
TOTAL	73	7,658

LANDHOLDING CLASSIFICATION TABLE ALL SERVICES BY ISLAND

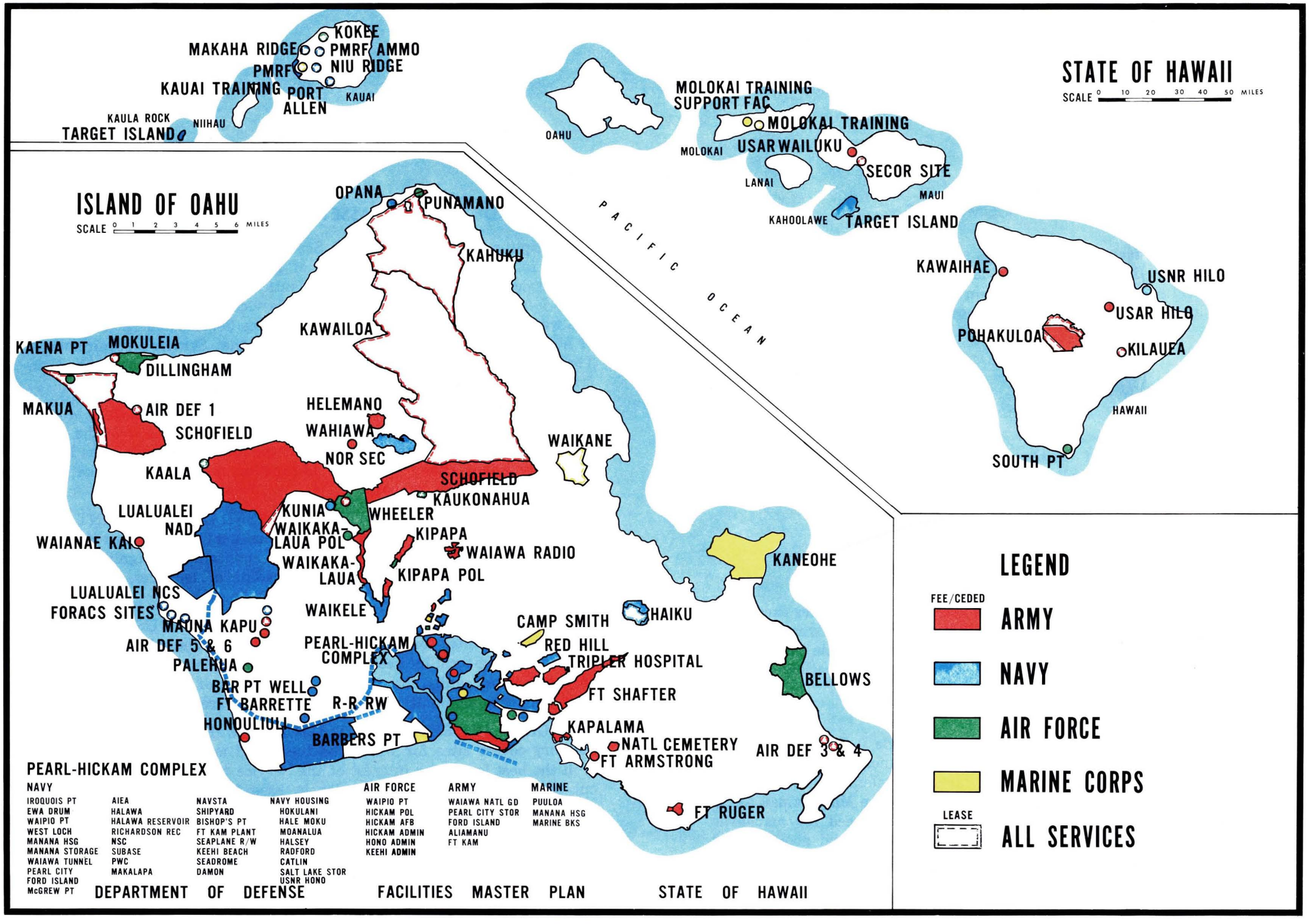
ISLAND		ARMY	NAVY	AIR FORCE	MARINES	TOTAL
OAHU	F	3,350	15,426	2,988	2,826	
	C	18,348	6,114	2,247	1,360	24.7%*
	L	37,489	2,320	627	1,061	
	SUB	59,187	23,860	5,862	5,247	94,156
HAWAII	F	4	2	0	0	
	C	84,818	0	0	0	4.5%
	L	31,676	0	21	0	
	SUB	116,498	2	21	0	116,521
MAUI	F	4	0	0	0	
	C	0	0	0	0	.001%
	L	1	0	0	0	
	SUB	5	0	0	0	5
KAUAI	F	0	0	0	0	
	C	0	1,927	0	0	5.8%
	L	0	447	10	18,000	
	SUB	0	2,374	10	18,000	20,384
MOLOKAI	F	0	0	0	0	
	C	0	0	0	14	15.1%
	L	0	0	0	25,000	
	SUB	0	0	0	25,014	25,014
KAHOOLAWE	C	0	28,777	0	0	99.9% 28,777
KAULA ROCK	F	0	108	0	0	100% 108
TOTAL ACRES		175,690	55,121	5,893	48,261	6.9% 284,965

*Percent of Island Acreage controlled by DOD.
All Figures in Acres



EXISTING FACILITY LOCATIONS

COMPOSITE



EXISTING FACILITY ASSETS—COMPOSITE

The chart on the facing page compares existing assets and long-range requirements of all Services in terms of land area. A tenth category, unused land, is added so that all land assets can be described in terms of present use. The long-range requirements are those developed in Chapter Two.

ASSETS DETERMINATION

Existing land area assets by categories of land use were obtained from a review and analysis of existing conditions shown on base general development maps, data supplied by activity real estate managers, and on-site inspections.

ANALYSIS OF EXISTING ASSETS—COMPOSITE

Composite requirements exceed existing assets in all categories except for communications and unused land. The 7,700 acres of land currently unused include: land on the perimeter of bases which is unusable due to poor topography or location and land which is to be used to satisfy some of the current facility deficiencies.

The training area requirement is the largest single indicated deficiency. This category is shown in two subcategories: maneuver areas including small arms and artillery ranges, and a target complex for Navy surface units and Navy and Marine Corps air units. Since the Marines use Army maneuver areas as schedules permit, the composite need for maneuver areas is reduced. Kahoolawe and Kaula Rock, which total about 28,900 acres, surrounded by controlled access water areas, provide the equivalent of a 12 x 20 nautical mile target range for live firing by air and surface units. This target complex satisfies the requirements of the Navy and the Marine Corps.

ANALYSIS OF EXISTING ASSETS—BY SERVICE

A description and analysis of each Service's existing assets are presented on the following pages. Two forms of graphic representation are used. A chart describing existing assets is identical to the composite chart. The other is a map showing sites that the Service currently occupies. Each site was separately analyzed by the respective Service and rated in terms of how that site could best be used to meet that Service's requirements. The analysis was based on function and oriented to the long-range time frame. Each site was placed into one of the following five categories:

CATEGORY I: RETAIN WITH PRESENT USE. This category applies to sites for which the functional analysis indicated that it is in the Service's best long-term interest to remain at the location essentially as today. Relatively minor changes in base loading or mission could take place without changing the category.

CATEGORY II: RETAIN WITH INCREASED DEVELOPMENT. This category covers sites for which the functional analysis indicated that it is in the Service's best long-term interest to maintain and significantly increase its presence at the location. Upgrading of facilities, increases in base loading and more extensive usage would be expected.

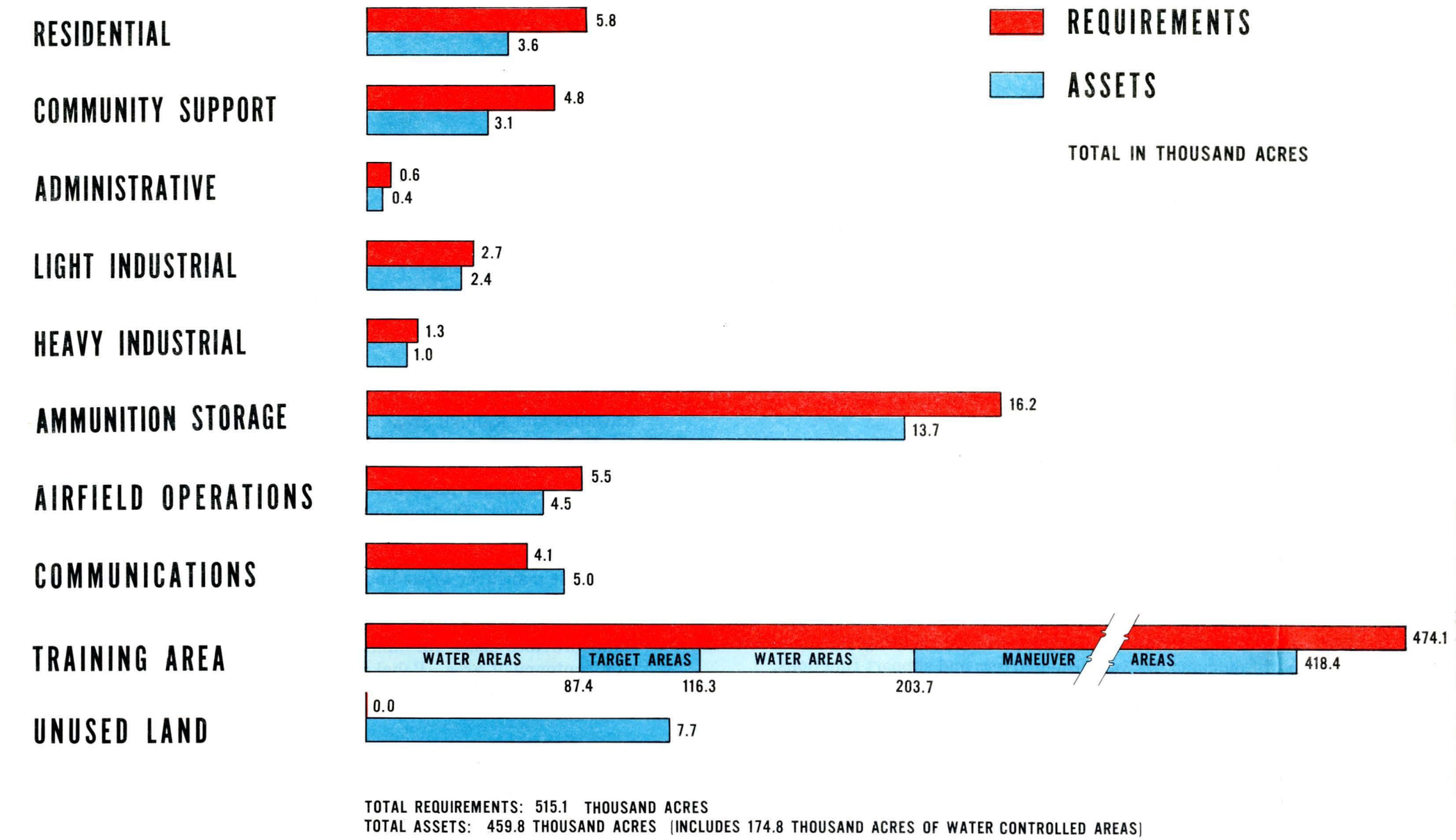
CATEGORY III: RETAIN BUT MODIFY PRESENT USE. This category comprises sites for which the functional analysis indicated that it is in the best long-term interest of the Service to remain in the location, but only with significantly changed use. An example of such a change would be to eliminate ammunition storage and use the area for family housing.

CATEGORY IV: RETAIN BUT DECREASE PRESENT USE. This category covers sites for which the functional analysis indicated that it is in the best long-term interest of the Service to remain at the location, but on a reduced scale. Decreases in base loading and less extensive usage would be expected.

CATEGORY V: SUSPEND USE. This category covers sites (or portions of sites) for which the functional analysis indicated that it is in the best long-term interest of the Service to relocate the functions to a new location or to eliminate currently unused areas from consideration for future use.

EXISTING FACILITY ASSETS

COMPOSITE



TOTAL REQUIREMENTS: 515.1 THOUSAND ACRES
TOTAL ASSETS: 459.8 THOUSAND ACRES (INCLUDES 174.8 THOUSAND ACRES OF WATER CONTROLLED AREAS)

FUNCTIONAL ANALYSIS—ARMY

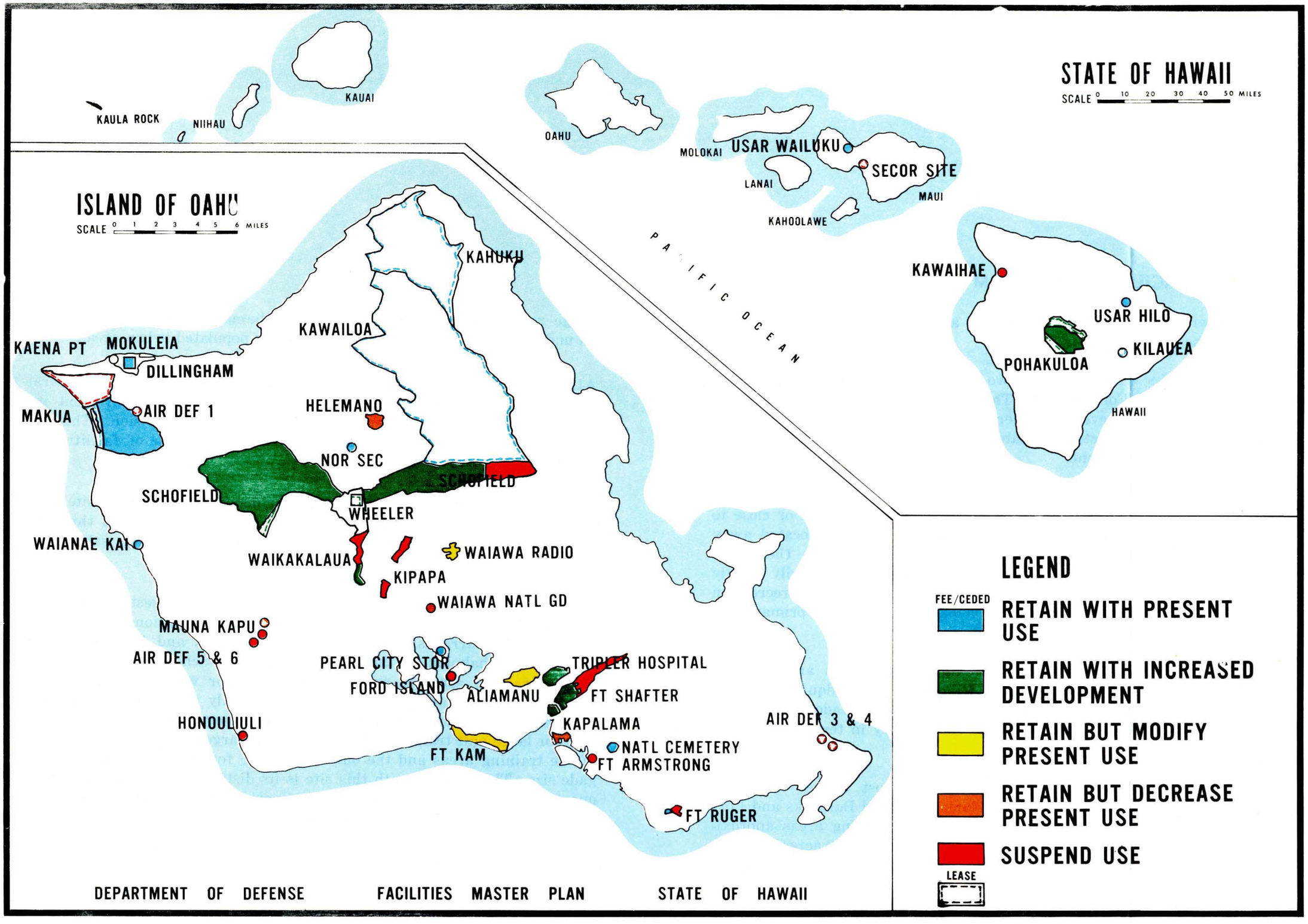
The results of the Army functional analysis of its facilities are depicted on the map on the facing page.

Administrative and control functions of U. S. Army, Pacific (USARPAC) should be located near the Command Headquarters of other Services for effective day-to-day communication and coordination. After analysis the Army concluded that the present Fort Shafter area satisfies this requirement. The capability exists for increased development within the existing area.

Infantry Division operations should, in general, be located so as to provide for contiguous siting of cantonment, support and training facilities. U. S. Army Support Command, Hawaii headquarters and support functions, which predominantly serve the Division, should be included in this concept. It was concluded that the Schofield Barracks area with its current heavy investment in facilities and suitable location was best suited for long-range retention to satisfy these requirements. Army aviation functions of the Division should be located in the vicinity of the Division's major facilities. Wheeler Air Force Base, which is adjacent to Schofield Barracks, currently fills this requirement and is recommended for increased joint use to satisfy Army aviation requirements.

Division training operations fall into two categories: maneuver and live firing. Terrain features and isolation from urban or populated areas weigh heavily in the choice of suitable locations. The rugged land mass of the Kawailoa and Kahuku areas, with their proximity to the Division cantonment area and relative isolation from populated areas, provide terrain suited to ground combat training. The Kawailoa area, however, cannot be fully utilized for large unit combat training because of its very rugged terrain features. Portions of Dillingham Air Force Base are used for troop staging areas during maneuver exercises. It is proposed to retain these areas for long-term training requirements for small and medium-sized unit maneuver areas and for small arms live firing exercises. Heavy weapons firing and brigade-size maneuver exercises posed specific location problems because of the large, isolated areas needed. Makua Valley on Oahu provides space for limited heavy weapons firing close to the Division cantonment area. Pohakuloa Training Area on the Island of Hawaii provides an area for both heavy weapons firing and brigade-size maneuver exercises.

Army ammunition storage operations were analyzed and it was concluded that economy could be achieved by assigning the responsibility for storing all ammunition on the Island of Oahu to the Navy. Aliamanu Crater, which the Army presently uses for part of its ammunition storage requirements, is an undesirable location from the standpoint of proximity to urban areas. A higher and better use as a multi-Service housing site is proposed for this area.


STATE OF HAWAII
SCALE 0 10 20 30 40 50 MILES
KAULA ROCK
NIIHAU
KAUAI
OAHU
MOLOKAI
USAR WAILUKU
SECOR SITE
LANAI
MAUI
KAHOOLAWE
ISLAND OF OAHU
SCALE 0 1 2 3 4 5 6 MILES
KAHUKU
KAWAILOA
KAENA PT
MOKULEIA
DILLINGHAM
MAKUA
AIR DEF 1
HELEMANO
NOR SEC
SCHOFIELD
SCHOFIELD
WHEELER
WAIANAE KAI
WAIKAKALAUA
WAIAWA RADIO
KIPAPA
WAIAWA NATL GD
MAUNA KAPU
AIR DEF 5 & 6
PEARL CITY STOR
FORD ISLAND
ALIAMANU
TRIPLER HOSPITAL
FT SHAFTER
KAPALAMA
HONOULIULI
FT KAM
NATL CEMETERY
FT ARMSTRONG
AIR DEF 3 & 4
FT RUGER
PACIFIC OCEAN
KAWAIHAE
USAR HILO
KILAUEA
POHAKULOA
HAWAII
LEGEND
FEE/CEDED
RETAIN WITH PRESENT USE
RETAIN WITH INCREASED DEVELOPMENT
RETAIN BUT MODIFY PRESENT USE
RETAIN BUT DECREASE PRESENT USE
SUSPEND USE
LEASE
DEPARTMENT OF DEFENSE FACILITIES MASTER PLAN STATE OF HAWAII

EXISTING FACILITY ASSETS—ARMY

The following is a discussion of facility assets, deficiencies and excesses based on the chart on the facing page.

RESIDENTIAL. The Army has two principal cantonment areas: Schofield Barracks and Fort Shafter. These two installations, Tripler Army Medical Center, and several smaller sites include family housing areas. These areas are satisfactorily located to serve their purpose but do not fulfill the total requirement.

COMMUNITY SUPPORT. This function is closely related to residential land use and most of the land dedicated to this use is within or close to residential areas. Significant community support facilities located away from residential areas are: the recreation areas of Mokuleia (beach facilities) and Waianae Kai (beach facilities, cottages, primarily family oriented) on the Island of Oahu, and Kilauea (family-oriented recreation center) on the Island of Hawaii. The 900-acre deficiency is primarily in the Schofield Barracks area.

ADMINISTRATION. The primary administrative areas are Schofield Barracks (home of the 25th Infantry Division and Headquarters, U. S. Army Support Command, Hawaii) and Fort Shafter (Headquarters, U. S. Army, Pacific). Both of these areas are satisfactory in terms of location and capacity.

LIGHT INDUSTRY. This function consists almost entirely of warehousing with primary locations at Kapalama, Schofield Barracks and Fort Shafter. Within the three widely separated warehousing areas approximately 200 acres are excess to Army needs. Of this total 50 acres at Kapalama are currently outleased to the State of Hawaii.

AMMUNITION STORAGE. Army ammunition storage areas are located at Aliamanu, Kipapa and Waikakalaua. Existing assets exceed long-range requirements by 200 acres. The Aliamanu storage facility is in an undesirable location adjacent to a densely populated urban area.

AIRFIELD OPERATIONS. Assets include helicopter pads at several locations. In addition to these helicopter facilities, the requirement includes aviation facilities in support of the Infantry Division. This requirement is currently being satisfied by the Army's use of facilities on Wheeler Air Force Base.

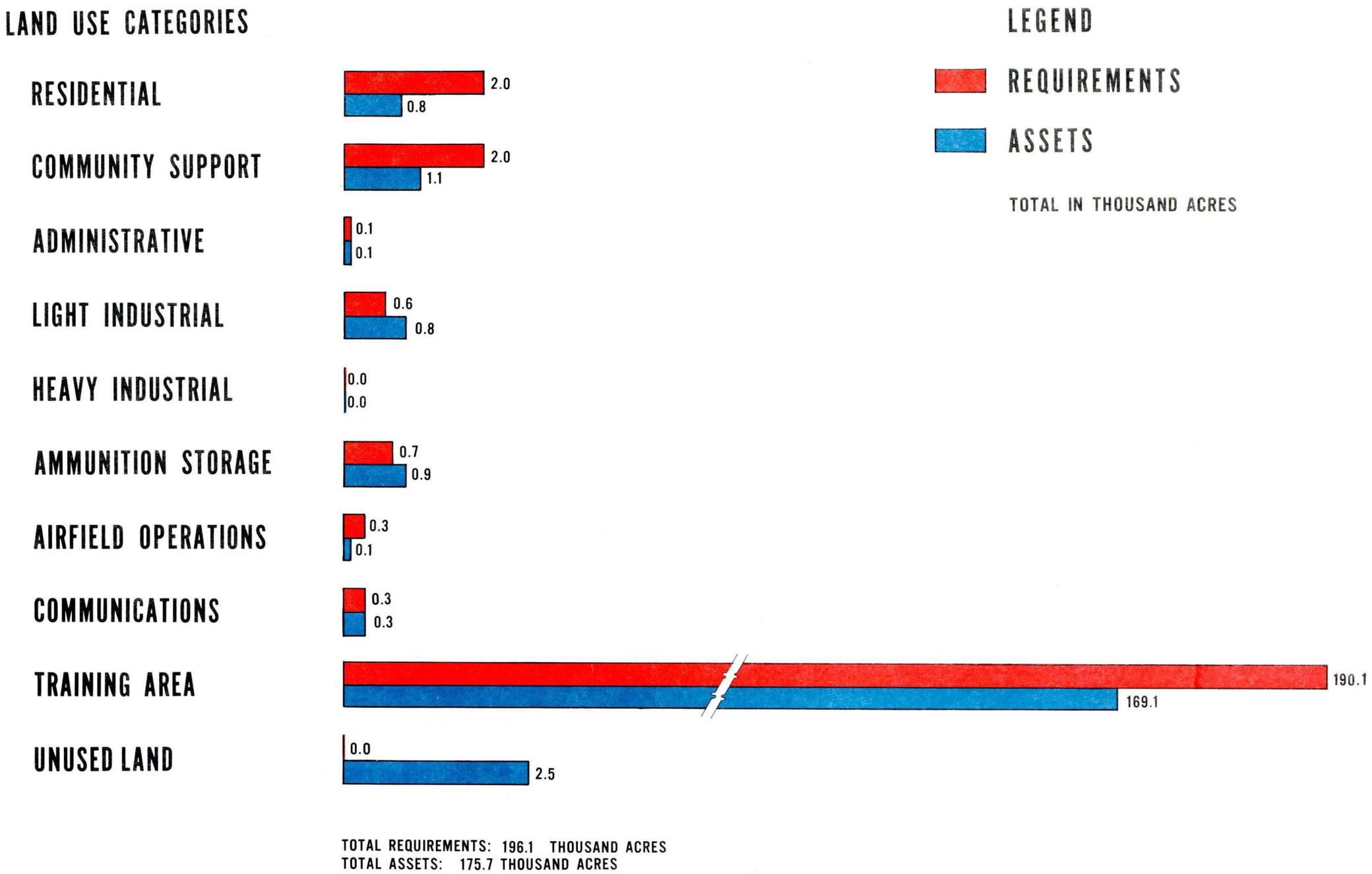
COMMUNICATIONS. Helemano is the primary communication site used by the Army. Additionally, the Army has numerous easements throughout Oahu for a communications cable network. These assets satisfy requirements and are adequately located.

TRAINING. This category comprises the Army's largest requirement and asset and also its largest deficit. The primary locations for training are Schofield Barracks, Kahuku, Kawailoa, Makua and East Range on Oahu, and Pohakuloa on the Island of Hawaii. Schofield Barracks and Makua training acreages are used primarily for various firing ranges. Kahuku, Kawailoa and East Range are primarily maneuver areas. Portions of these maneuver areas are rugged mountainous regions unsuitable for large unit training. Pohakuloa is the largest, most comprehensive of the training areas and the only one usable for training a unit of brigade size. The problem with this site is its distance from Division Headquarters at Schofield Barracks. Transportation availability and costs deter optimum use of this training area.

UNUSED LAND. Most of the unused land is unusable because of unsuitable terrain features. Usable land that is presently unused is programmed to fill existing deficiencies and planned expansions or for relocation of existing facilities.

EXISTING FACILITY ASSETS

ARMY



TOTAL REQUIREMENTS: 196.1 THOUSAND ACRES
TOTAL ASSETS: 175.7 THOUSAND ACRES

FUNCTIONAL ANALYSIS—NAVY

The results of the Navy functional analysis of its installations are reflected on the map on the facing page.

Present Navy locations, in general, were judged suitable for satisfying present and long-range requirements.

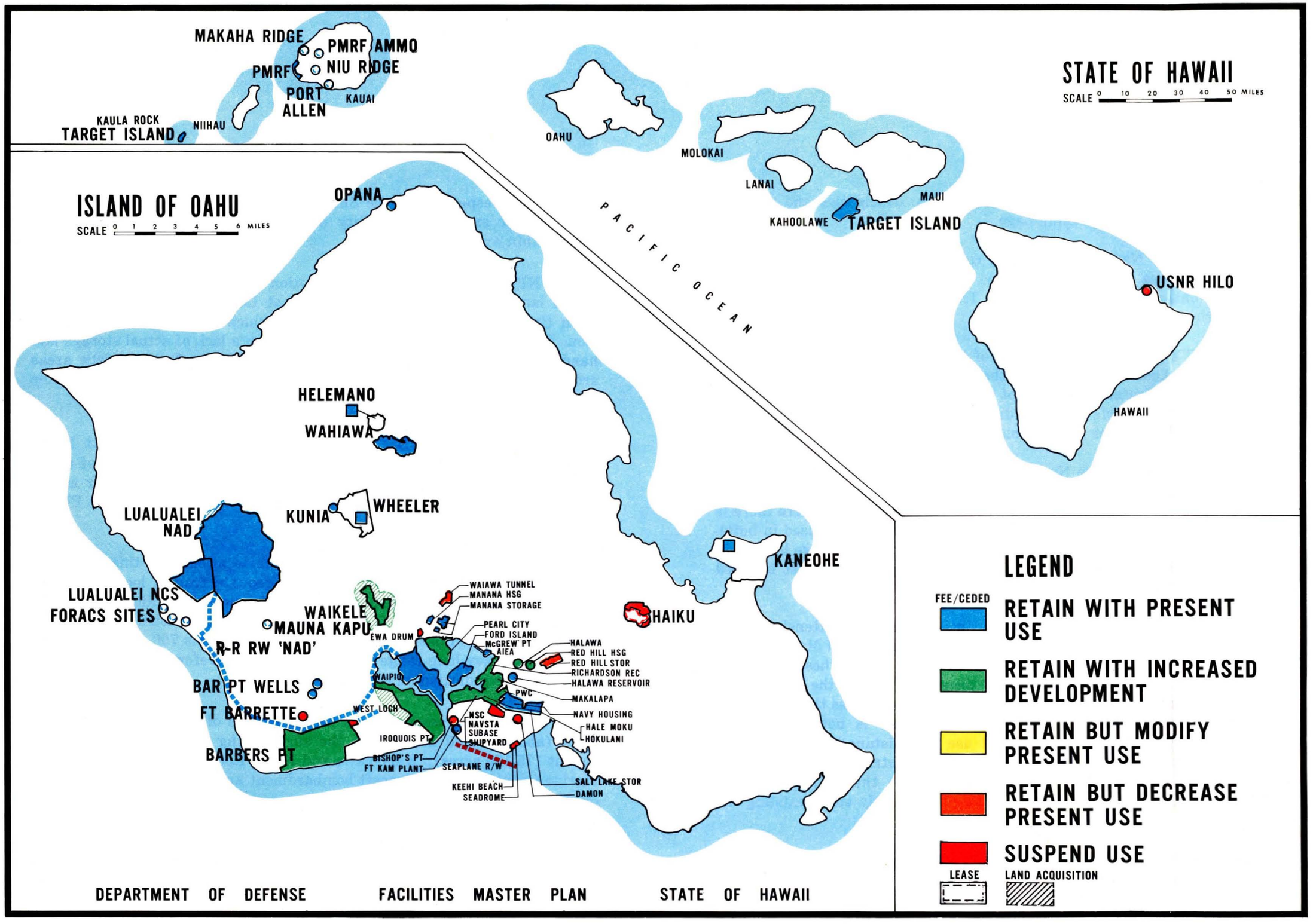
Fleet operations and support functions are presently located in the Pearl Harbor complex and it was concluded that this location should be retained with increased development. Space exists for some expansion in the Pearl Harbor area and these areas should be used to meet long-range requirements.

It was concluded that the Navy's transmitter facilities at Lualualei and receiver facilities at Wahiawa should be retained for present purposes. Required clearance zones around the antenna fields necessitate retention of all real estate presently held at the transmitter and receiver locations. Existing assets will satisfy foreseeable requirements. A preliminary study also indicates that Air Force communications facilities could be collocated with Navy facilities.

A multi-purpose target area in Hawaii is a long-range requirement. As described in Chapter Two, this requirement is for a relatively large land mass with specific terrain features for varied target simulation. Further, it must be isolated from populated areas for safety clearance and noise attenuation. After an exhaustive study, it has been concluded that Kahoolawe and Kaula Rock Islands are the only locations which satisfy these conditions. Although the combined areas of these Islands are in total far less than the specified area for such a target complex, they are the only suitable locations in the Hawaiian Area for this purpose. Through coordination of training schedules, optimum placement of targets, and selective arrangement of fire zones, Kahoolawe and Kaula Rock satisfy minimum requirements for this type of training.

Naval Reserve Facilities are on Oahu at the Salt Lake storage area and in Hilo on the Island of Hawaii. Requirements for this function at both locations are long range: however, the Navy unit at Hilo can be collocated with the present Army Reserve Facility in Hilo.

The Omega site at Haiku is a ship navigation communication station currently being constructed under Navy supervision. When completed, the facility will be turned over to the Coast Guard for operation.


MAKAHA RIDGE
PMRF AMMO
PMRF
NIU RIDGE
PORT ALLEN
KAUAI
KAULA ROCK
TARGET ISLAND
NIIHAU
STATE OF HAWAII
SCALE 0 10 20 30 40 50 MILES
OAHU
MOLOKAI
LANAI
MAUI
KAHOOLAWE
TARGET ISLAND
ISLAND OF OAHU
SCALE 0 1 2 3 4 5 6 MILES
OPANA
PACIFIC OCEAN
USNR HILO
HAWAII
HELEMANO
WAHIAWA
LUALUALEI NAD
KUNIA
WHEELER
LUALUALEI NCS
FORACS SITES
WAIKELE
MAUNA KAPU
EWA DRUM
R-R RW 'NAD'
BAR PT WELLS
FT BARRETTE
WEST LOCH
IROQUOIS PT
BARBERS PT
BISHOP'S PT
FT KAM PLANT
WAIAWA TUNNEL
MANANA HSG
MANANA STORAGE
PEARL CITY
FORD ISLAND
McGREW PT
AIEA
HALAWA
RED HILL HSG
RED HILL STOR
RICHARDSON REC
HALAWA RESERVOIR
WAIPIO
PWC
MAKALAPA
NAVY HOUSING
NSC
NAVSTA
SUBASE
SHIPYARD
HALE MOKU
HOKULANI
SEAPLANE R/W
KEEHI BEACH SEADROME
SALT LAKE STOR
DAMON
HAIKU
KANEOHE
LEGEND
FEE/CEDED
RETAIN WITH PRESENT USE
RETAIN WITH INCREASED DEVELOPMENT
RETAIN BUT MODIFY PRESENT USE
RETAIN BUT DECREASE PRESENT USE
SUSPEND USE
LEASE
LAND ACQUISITION
DEPARTMENT OF DEFENSE FACILITIES MASTER PLAN STATE OF HAWAII

EXISTING FACILITY ASSETS—NAVY

The following is a discussion of facility assets, deficiencies and excesses based on the chart on the facing page.

RESIDENTIAL. Navy assets in this category are scattered throughout an extensive area including the Pearl Harbor complex, Iroquois Point, Barbers Point, and outlying activities. The bulk of the deficiency is in the Pearl Harbor area.

COMMUNITY SUPPORT. Locations of these assets are closely aligned to residential land use with the bulk of the deficiency also in the Pearl Harbor area. Makalapa Crater, which is not totally suitable for heavy structures because of poor subsurface soil conditions, can be used to partially satisfy requirements for outdoor recreational facilities.

ADMINISTRATION. The Navy, like other Services, has a number of Pacific headquarters in Hawaii which comprise a large share of this asset. Most of these are in the high density Pearl Harbor complex where there is little opportunity to lower the density. Training facilities housed in buildings are also included in this category. Because these assets are located in the Pearl Harbor area and the needed additional facilities must be sited in the same complex, high density siting will be necessary.

LIGHT INDUSTRIAL. These assets consist mainly of extensive warehousing facilities at Pearl Harbor, Pearl City Peninsula and Manana areas owned by the Naval Supply Center, Pearl Harbor. Since these assets are at a higher density than established by planning criteria, the majority of the deficiency in this category can be satisfied by using less than optimum, but acceptable, density. The Manana storage site is not an optimum location in terms of surrounding land use and distance from receiving piers and supply points. The only other light industrial facility is located at the Pacific Missile Range Facility (PMRF) on the island of Kauai, which has sufficient unused area to satisfy a relatively small existing deficiency.

HEAVY INDUSTRIAL. The Navy has far more assets in this category than any of the other Services. Two types of facilities, the Naval Shipyard and extensive POL storage areas, are included in these assets. Although there is a 400 acre deficit, the density factor for heavy industrial facilities is very high, especially in the Shipyard where there is little vacant land available for expansion. Facility deficiencies, however, will have to be sited within existing land assets.

AMMUNITION STORAGE. Ammunition storage is the second largest use of land by the Navy. The sites are at Lualualei, Waikele, and West Loch (including Waipio Peninsula), all of which are suitable for the mission. The large deficit of land results not from a lack of actual storage and handling facilities, but from a requirement for explosive safety areas around the existing facilities at Lualualei, Waikele, West Loch and the Pacific Missile Range Facility on Kauai.

AIRFIELD OPERATIONS. Operations are primarily located at Naval Air Station, Barbers Point. The area is well suited for this type of activity. The deficiency shown on the chart results from a lack of air safety clearance zones contiguous to NAS Barbers Point and the airfield at PMRF Barking Sands, Kauai.

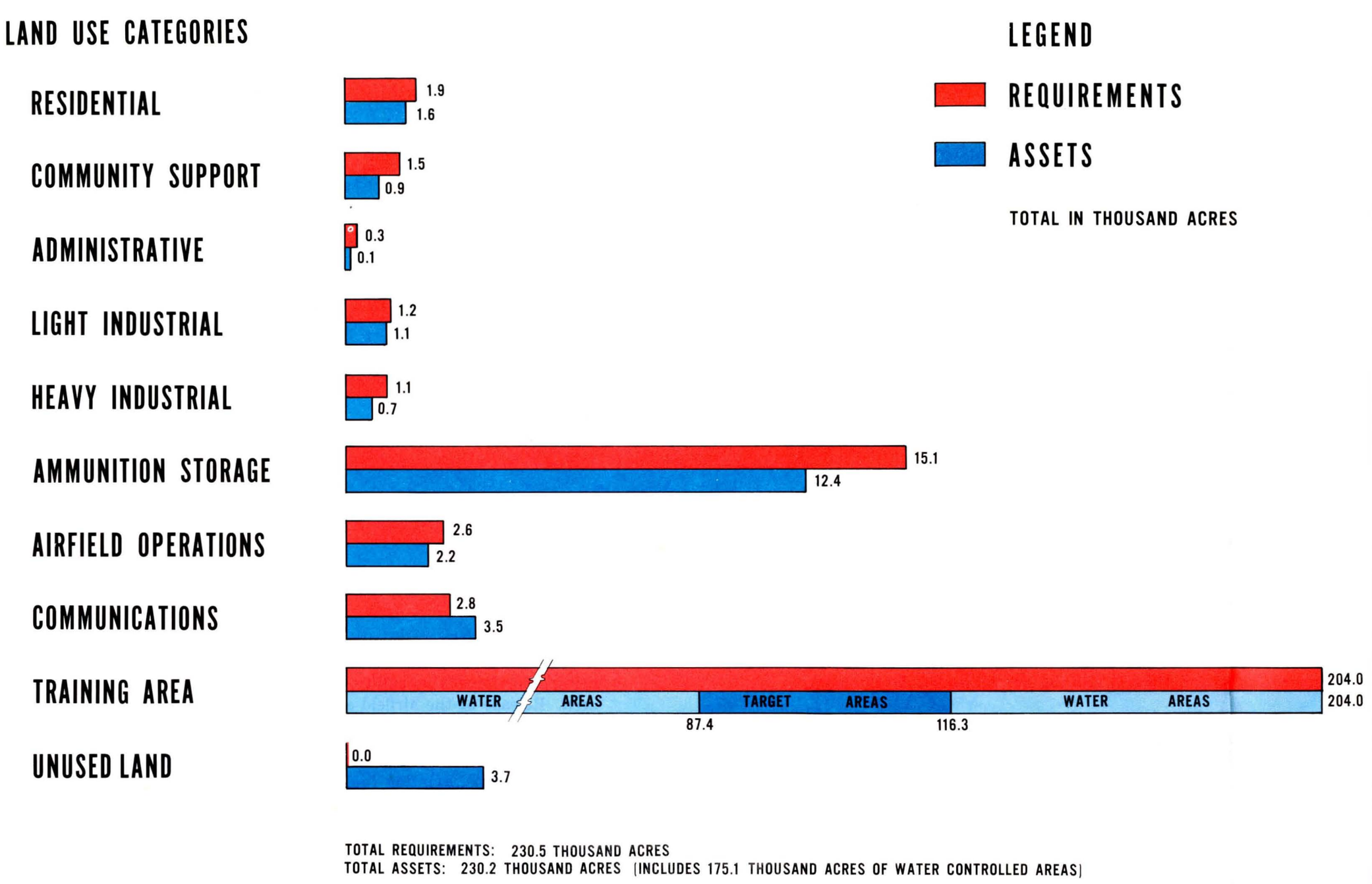
COMMUNICATIONS. There are two main locations for this function: Lualualei and Wahiawa. Both sites are adequate from a location standpoint and there is no deficiency. The Navy's current holding at Haiku, a navigation/communication facility presently under construction, will be turned over to the Coast Guard when completed. This 700 acre site is not carried as a Navy long-range requirement and, therefore, assets exceed requirements as indicated on the chart.

TRAINING. These assets consist of the Islands of Kahoolawe and Kaula Rock (about 28,900 acres) and the surrounding controlled water areas (about 175,100 acres). Kahoolawe and Kaula Rock serve as the Navy and Marine Corps ship and aircraft bombardment and close air support training areas.

UNUSED LAND. This category includes approximately 1,350 acres of unusable (steep slopes and gulleys) conservation and watershed areas and base periphery lands; about 750 acres of usable but unused lands; and 1,600 acres of land programmed for construction of new or relocated facilities.

EXISTING FACILITY ASSETS

NAVY



TOTAL REQUIREMENTS: 230.5 THOUSAND ACRES
TOTAL ASSETS: 230.2 THOUSAND ACRES (INCLUDES 175.1 THOUSAND ACRES OF WATER CONTROLLED AREAS)

FUNCTIONAL ANALYSIS—AIR FORCE

The results of the Air Force functional analysis of its installations are depicted on the map on the facing page.

Of the four major Air Force installations, only Hickam Air Force Base is considered to be functionally suitable for increased development.

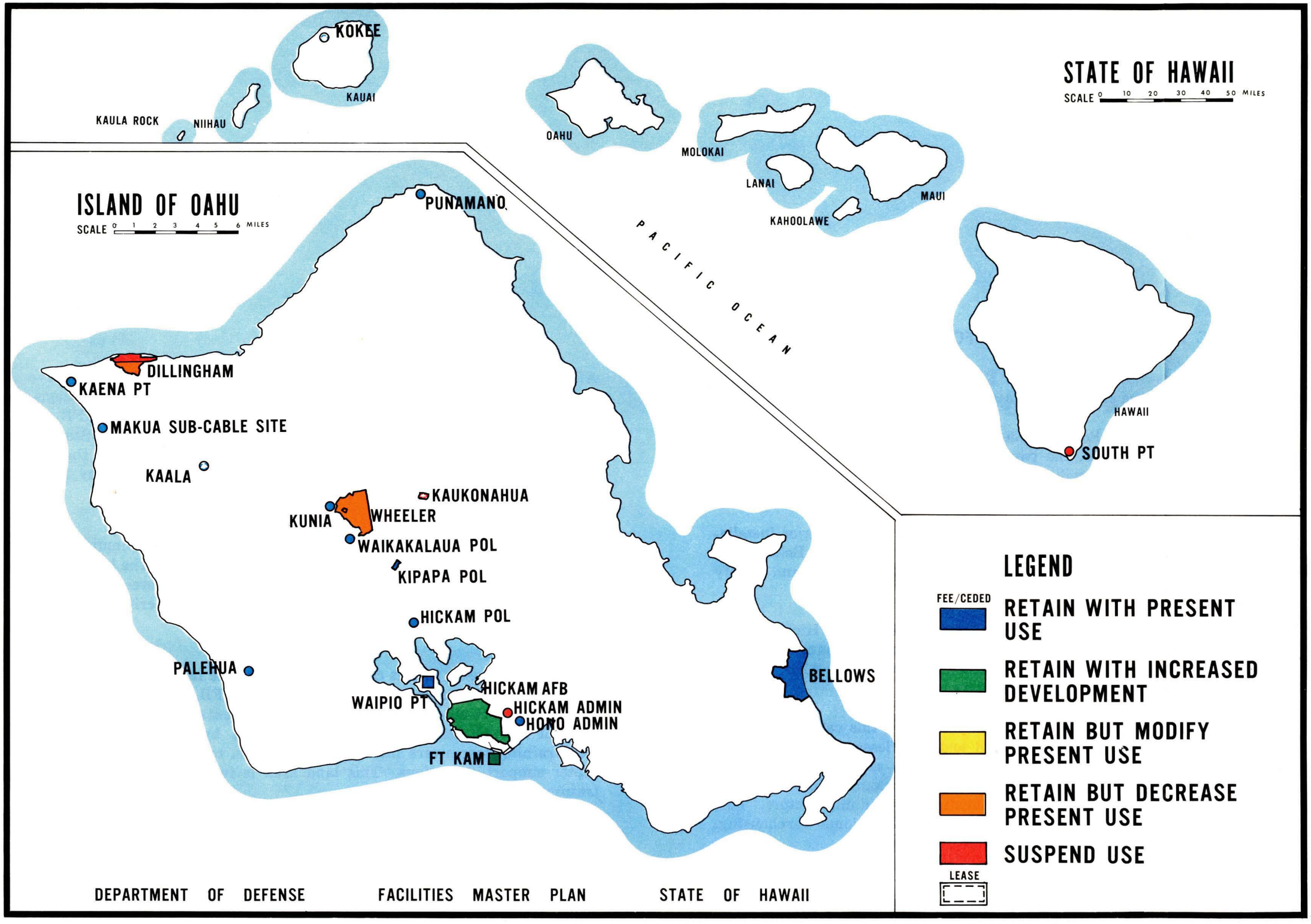
It was concluded that it would be in the best interest of the Department of Defense to decrease Air Force use of Wheeler Air Force Base by relocating portions of the ammunition storage to Navy areas. Continued use of Wheeler AFB for Army aviation requirements on a joint-use basis is proposed.

The Air Force concluded that Bellows Air Force Station would continue to be used for the Air Force communication transmitting facilities. The retention of this installation would also continue to partially satisfy the Marine Corps need for amphibious and small unit ground combat training areas.

The Air Force has no requirement for Dillingham Air Force Base and it is proposed to suspend use of this facility. The Army desires to continue using a portion of the facility, south of the runway, for a maneuver staging area. Release of the airfield area, but retention of areas inland to satisfy Army training requirements, is recommended.

In general the Air Force's outlying sites, which are used for specialized communications, aviation fuels and oil storage, and satellite tracking, are considered to be suitably located for the respective functions for the long term.

The Hickam Administrative Annex is an isolated facility. This function could be more suitably collocated with similar functions at Hickam AFB. The use of this annex could be suspended when a replacement facility is available.


KOKEE
KAUAI
KAULA ROCK
NIIHAU
OAHU
MOLOKAI
LANAI
MAUI
KAHOOLAWE
STATE OF HAWAII
SCALE 0 10 20 30 40 50 MILES
ISLAND OF OAHU
SCALE 0 1 2 3 4 5 6 MILES
PUNAMANO
PACIFIC OCEAN
HAWAII
SOUTH PT
DILLINGHAM
KAENA PT
MAKUA SUB-CABLE SITE
KAALA
KAUKONAHUA
KUNIA
WHEELER
WAIKAKALAUA POL
KIPAPA POL
HICKAM POL
PALEHUA
WAIPIO PT
HICKAM AFB
HICKAM ADMIN
HONO ADMIN
FT KAM
BELLOWS
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RETAIN WITH PRESENT USE
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SUSPEND USE
LEASE
DEPARTMENT OF DEFENSE FACILITIES MASTER PLAN STATE OF HAWAII

EXISTING FACILITY ASSETS—AIR FORCE

The following is a discussion of Air Force facility assets, deficiencies and excesses based on the chart on the facing page.

RESIDENTIAL. Air Force residential complexes are at Hickam and Wheeler Air Force Bases, the two major Air Force installations in the State. The deficit shown will be eliminated under programmed construction of family housing, BEQs and BOQs at Hickam AFB.

COMMUNITY SUPPORT. Existing assets are at the two major installations and a multi-Service beach recreation facility located at Bellows Air Force Station. All of these are adequate in terms of location and satisfy the identified requirements.

ADMINISTRATION. These assets are for the most part at Hickam AFB, which has a number of administrative activities and commands including Headquarters Pacific Air Forces. The total assets at Hickam AFB, Wheeler AFB and outlying areas satisfy the requirement.

LIGHT INDUSTRIAL. The largest components of this category are the warehousing functions at Hickam AFB and to a lesser degree, Wheeler AFB. Base engineer/base housekeeping functions at these locations are also included. The facilities in this category at Hickam AFB occupy less acreage than would be allowed by application of planning factors. This situation, together with a specific requirement for additional warehousing, account for the bulk of the deficiency shown on the chart.

HEAVY INDUSTRIAL. This asset primarily includes those POL facilities for bulk fuel storage and handling. Existing assets are sufficient to satisfy the requirements in this category.

AIRFIELD OPERATIONS. Both Hickam AFB and Wheeler AFB have airfield assets and both are adequate to serve the respective missions. The deficit shown results from the fact that assets at Hickam AFB exclude portions of the runway and taxiway which are owned by the State of Hawaii, but used on a joint basis by commercial operators and the Air Force. Therefore, the deficit shown is actually being satisfied by State assets and no additional area is required.

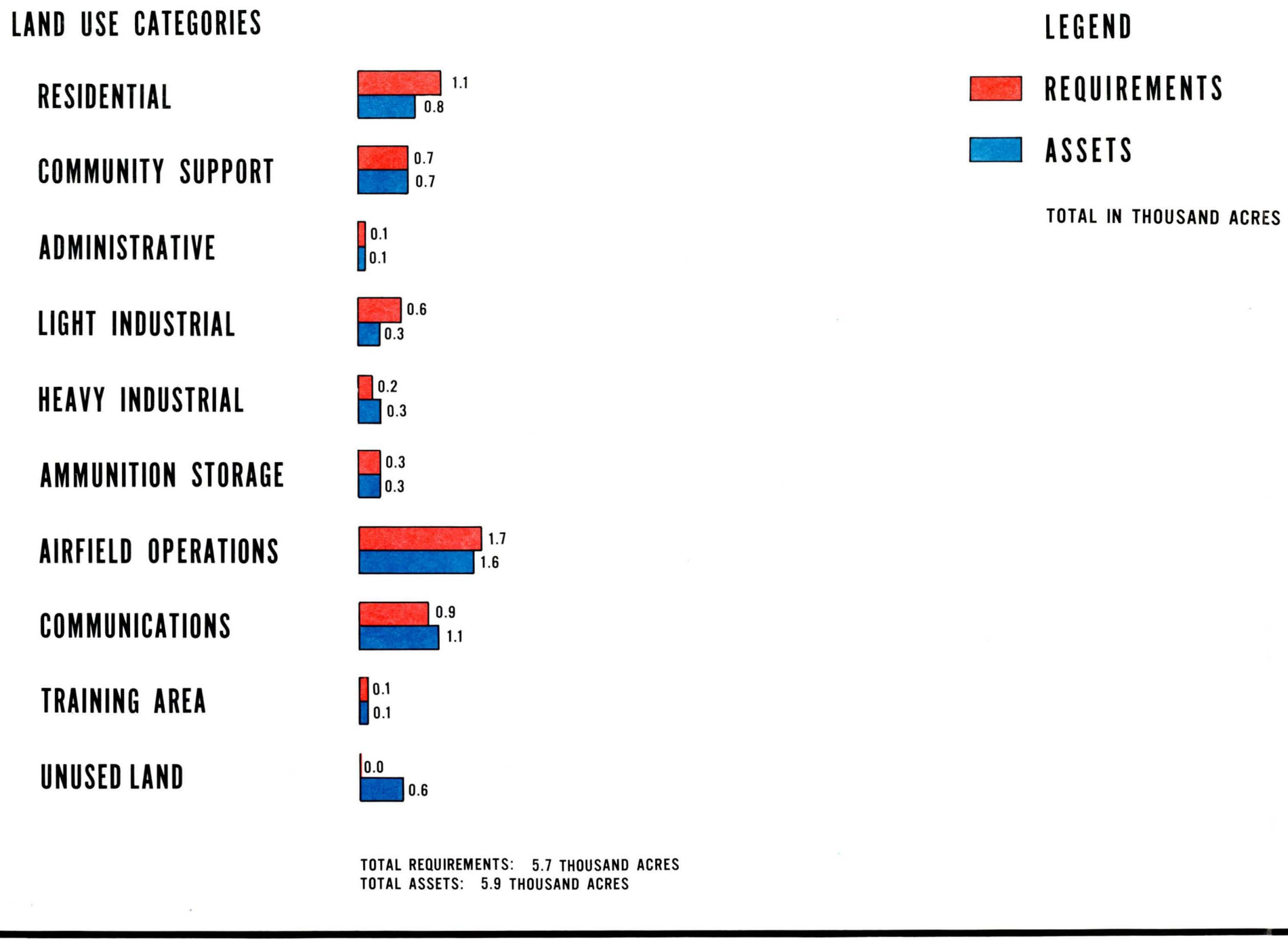
COMMUNICATIONS. The transmitter site for Air Force communications is at Bellows AFS and the receiver site is at Wheeler AFB. The locations of these existing assets are considered adequate by the Air Force. The actual siting density of the existing antenna fields is less than criteria requirements resulting in an excess of land in this category.

TRAINING. Assets in this category include a rifle range at Wheeler AFB and a fire-fighting training facility at Hickam AFB. These assets satisfy major Air Force outdoor-type training requirements. (Approximately 700 acres of training land at Bellows AFS are used by the Marine Corps for unit training maneuvers including amphibious, over-the-beach, and helicopter support operations. This land area is included in Marine Corps training assets.)

UNUSED LAND. The airfield at Dillingham AFB (335 acres) contains the major portion of unused Air Force land. Approximately 200 acres on the southern edge of Wheeler AFB, minor portions of Bellows AFS and Hickam AFB, and the installation at South Point on the Island of Hawaii comprise the rest of the 600 acres of unused Air Force land.

EXISTING FACILITY ASSETS

AIR FORCE



TOTAL REQUIREMENTS: 5.7 THOUSAND ACRES
TOTAL ASSETS: 5.9 THOUSAND ACRES

FUNCTIONAL ANALYSIS—MARINE CORPS

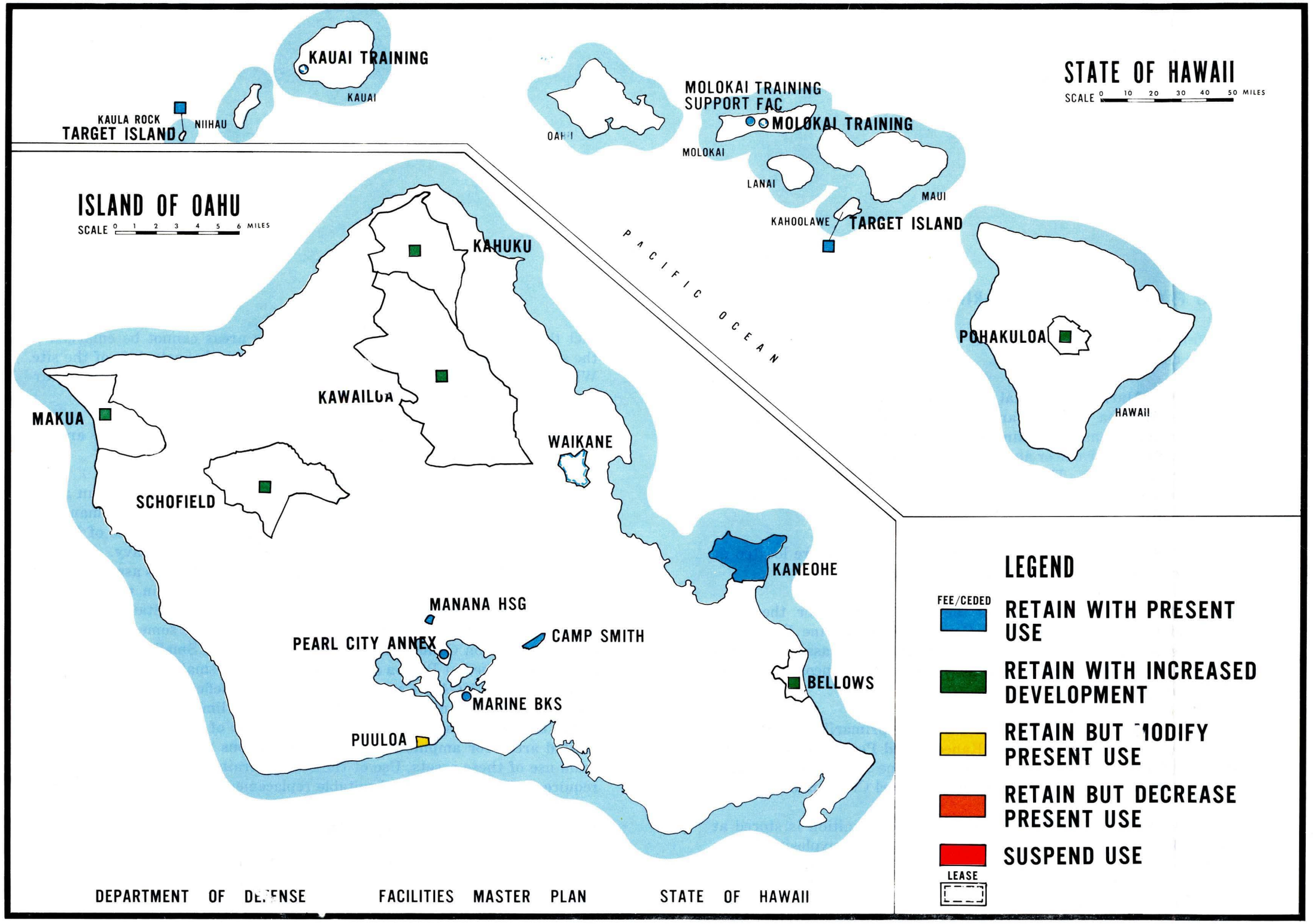
The results of the Marine Corps functional analysis of its installations are depicted on the map on the facing page.

Command and administrative functions of Fleet Marine Force, Pacific and Commander, Marine Corps Bases, Pacific should be located close to the command and administrative areas of the other Services for effective coordination. The Camp Smith complex, which also houses the Commander in Chief Pacific and his staff, satisfies this need and analysis indicates that these functions should remain at Camp Smith.

After analysis of the requirements of the air-ground elements of the First Marine Brigade, it was concluded that Mokapu Peninsula is best suited for this function. Marine Corps Air Station, Kaneohe should be retained on Mokapu Peninsula.

The requirement for Marine Corps amphibious and ground training areas, including training with air support units, posed certain problems in the analysis. The large areas required for an optimum training facility are not available in the State. The current use of some sites on a year-to-year lease basis, under very restrictive conditions, makes it extremely difficult to satisfy this requirement for the long range. Although use is made of Army training areas, such use is limited to an "as available" basis. With the return of additional Army division elements in the near future, Marine use of Army training areas will be more limited. A review of all DOD real property holdings revealed that other suitable training areas are not available. Continued use of present locations other than Puuloa Training Facility and increased use of training areas at Bellows AFS are therefore recommended. The area at Bellows AFS with its proximity to MCAS Kaneohe, its beach and varied terrain features, and its airfield areas for helicopter support operations is ideally suited for air-supported amphibious and ground combat training. After analysis, it was concluded that the Puuloa area is better suited for DOD housing and public beach use and that the firing range facility should, therefore, be moved to another area.

Marine close-air support training is a specific long-range requirement. It was concluded that use of the Navy target complexes on Kahoolawe and Kaula Rock will satisfy this training requirement. There are no other suitable areas in the State which could be used for this purpose.


KAUAI TRAINING
KAUAI
KAULA ROCK
TARGET ISLAND
NIIHAU
OAHU
MOLOKAI TRAINING SUPPORT FAC
MOLOKAI TRAINING
MOLOKAI
LANAI
MAUI
KAHOOLAWE
TARGET ISLAND
STATE OF HAWAII
SCALE 0 10 20 30 40 50 MILES
ISLAND OF OAHU
SCALE 0 1 2 3 4 5 6 MILES
KAHUKU
KAWAILOA
MAKUA
WAIKANE
SCHOFIELD
PACIFIC OCEAN
POHAKULOA
HAWAII
KANEOHE
MANANA HSG
PEARL CITY ANNEX
CAMP SMITH
BELLOWS
MARINE BKS
PUULOA
LEGEND
FEE/CEDED
RETAIN WITH PRESENT USE
RETAIN WITH INCREASED DEVELOPMENT
RETAIN BUT MODIFY PRESENT USE
RETAIN BUT DECREASE PRESENT USE
SUSPEND USE
LEASE
DEPARTMENT OF DEFENSE FACILITIES MASTER PLAN STATE OF HAWAII

EXISTING FACILITY ASSETS—MARINE CORPS

The following is a discussion of facility assets, deficiencies and excesses based on the chart on the facing page.

RESIDENTIAL. Marine residential assets are at Marine Corps Air Station, Kaneohe, Manana Housing area, Camp Smith and Pearl Harbor. MCAS Kaneohe and Manana contain the majority of family housing assets while the bulk of bachelor officer and enlisted quarters are located at MCAS Kaneohe and Camp Smith. The deficit shown is primarily in family housing and will be partially satisfied with currently programmed housing construction at MCAS Kaneohe.

COMMUNITY SUPPORT. For the most part, these assets are located at MCAS Kaneohe. The deficit is also at MCAS Kaneohe.

ADMINISTRATION. Camp Smith is the Headquarters for the Commander in Chief Pacific; Commanding General, Fleet Marine Force, Pacific; and Commander, Marine Corps Bases, Pacific. These assets at Camp Smith, together with administrative facilities at MCAS Kaneohe, make up the total. No deficiency exists.

LIGHT INDUSTRIAL. Light industrial assets are primarily warehousing with two principal locations at MCAS Kaneohe and Pearl City Peninsula. The deficit is, for the most part, a mount-out type storage requirement which can be satisfied at available areas in the Pearl City Annex.

AMMUNITION STORAGE. A small amount of ammunition is stored at MCAS Kaneohe. The requirement for this storage and explosive safety area is satisfied by the assets.

AIRFIELD OPERATIONS. The Marine Corps airfield assets are at the Marine Corps Air Station, Kaneohe. The land area deficit results from the fact that the existing runway and clearance areas cannot be enlarged to the size required by criteria because of the physical constraints of the site. With the surrounding water area of Kaneohe Bay, however, minimum airfield criteria are met.

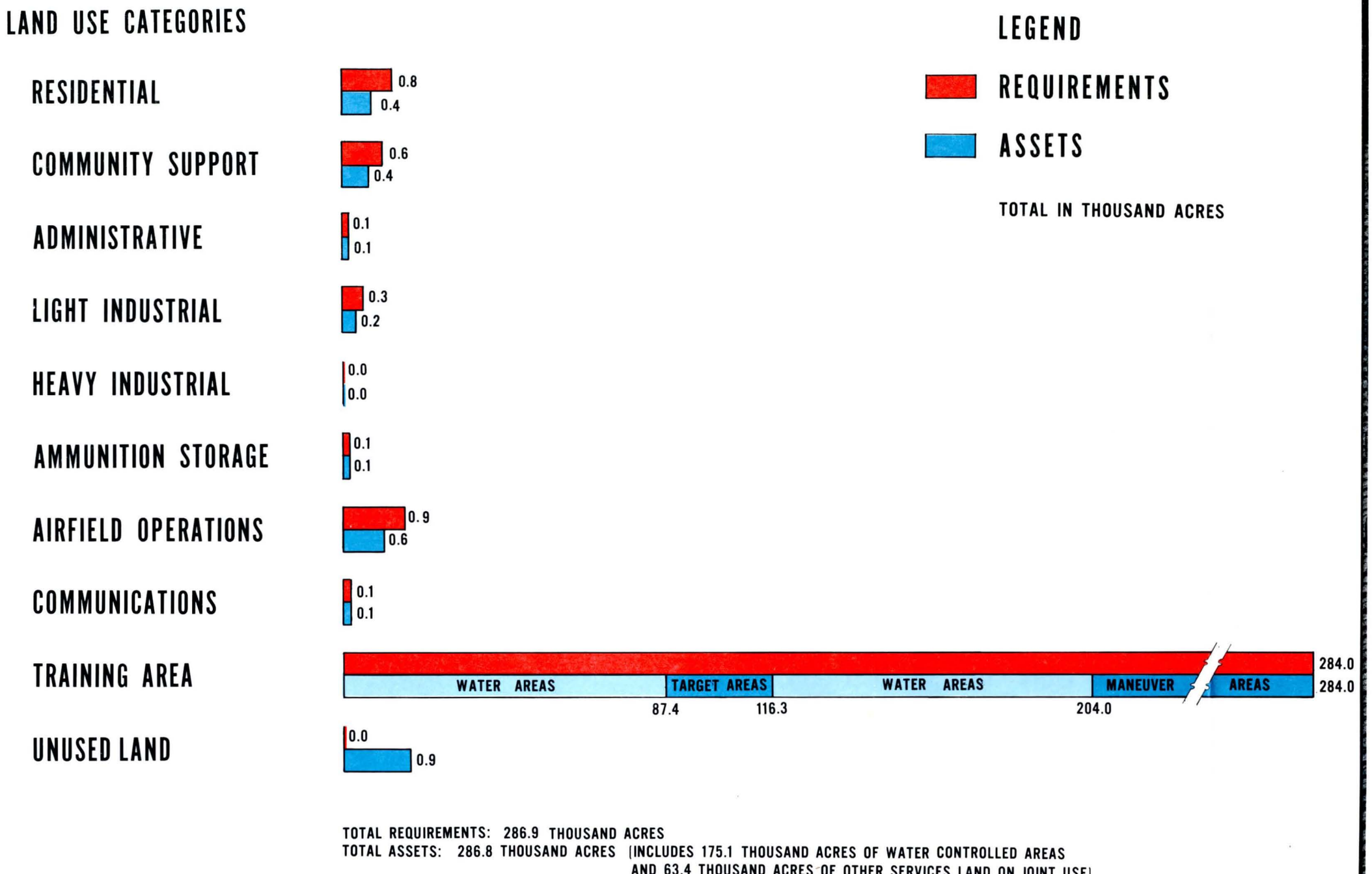
COMMUNICATIONS. Marine Corps communication requirements are satisfied by existing assets at Camp Smith and MCAS Kaneohe.

TRAINING. The assets shown are divided into two categories: an aerial bombardment and close-air support target range, and troop maneuver areas. The bombing range requirement is satisfied by joint use of Kahoolawe, Kaula Rock and surrounding water areas with the Navy. Although Kahoolawe, Kaula Rock and the water areas are counted as assets for both the Navy and the Marines, they are counted only once in the composite assets. The troop maneuver areas are Bellows Air Force Station, Waikane, an area on Kauai, a site on Molokai, and partial use of some of the Army's training areas on Oahu and Pohakuloa on Hawaii. Small unit training is also accomplished at Puuloa and Camp Smith and small arms firing is done at Puuloa and MCAS Kaneohe. Although no deficit in troop maneuver areas is reflected on the chart, the scheduling limitations on use of the Army training areas, restrictive use conditions of leased areas, and very limited areas for amphibious training operations result in less than optimum use of these assets. Use of the Puuloa Training area for housing will require the establishment of suitable replacement facilities at other sites.

UNUSED. Most of the unused land is at MCAS Kaneohe. Of this, about 500 acres are devoted to a wildlife refuge for the Hawaiian Stilt. An additional 300 acres at MCAS Kaneohe are presently unused but programmed to satisfy part of the family housing and community support deficits. The remaining unused land areas are generally small, unusable parcels consisting of forest reserve and base periphery areas.

EXISTING FACILITY ASSETS

MARINE CORPS



TOTAL REQUIREMENTS: 286.9 THOUSAND ACRES
TOTAL ASSETS: 286.8 THOUSAND ACRES (INCLUDES 175.1 THOUSAND ACRES OF WATER CONTROLLED AREAS AND 63.4 THOUSAND ACRES OF OTHER SERVICES LAND ON JOINT USE)

NOTES

CHAPTER FOUR
PLANNING ANALYSIS

THIS CHAPTER CONTAINS A DISCUSSION OF THE COMMUNITY ENVIRONMENT WITHIN WHICH THIS PLAN HAS BEEN FORMULATED AND THE IMPACTS OF THE OVERALL COMMUNITY ATTITUDES UPON DEPARTMENT OF DEFENSE FACILITIES. FROM THIS AND FROM THE FUNCTIONAL ANALYSES OF CHAPTER THREE, A MAP SHOWING PROPOSED LONG-RANGE DEPARTMENT OF DEFENSE LOCATIONS HAS BEEN PRODUCED. THE PURPOSE OF THIS CHAPTER IS TO IDENTIFY WHICH EXISTING LOCATIONS CAN BE UTILIZED ON A LONG-RANGE BASIS TO SATISFY THE DEPARTMENT'S FACILITY REQUIREMENTS.

COMMUNITY PLANNING ENVIRONMENT

As of July 1970, there were approximately 54,000 officers and enlisted men (including 14,000 aboard ships homeported in Hawaii) and over 57,000 military dependents in the State of Hawaii. These numbers have been relatively constant in recent years.

Economically, Hawaii has four major sources of income: Defense, Tourism, Sugar and Pineapple. In 1970, Defense led touristic expenditures $683.4 million to $593.6 million. In 1969, the value of sugar production was $182.5 million compared to $125.3 million for pineapple. With over one-quarter of the State's population directly dependent on Defense expenditures, the Armed Forces may be considered a major pillar in the economic well-being of the Islands.

Historically, military leaders in Hawaii have cooperated with City & County and State Governments. Recently the military has participated in regional planning and environmental efforts such as the Governor's Task Force on Pearl Harbor and Kaneohe Bay. The Navy has proposed a joint parks undertaking involving National Park Service, City Parks and Navy in a Pearl Harbor waterfront project known as "Rainbow Bay."

Geographically, the military is now more interrelated with the civilian community because of the phenomenal urban growth on Oahu during the past decade. During the same period the population on the Neighbor Islands remained constant or declined slightly. Between 1960 and 1970 the growth of 126% was largely the result of Mainland in-migration with much of the expansion occurring in Leeward and Windward Oahu. The path of growth in Honolulu skirted Hickam Air Force Base, Fort Shafter and Pearl Harbor and moved in the directions of Naval Air Station, Barbers Point and Schofield Barracks. Thus, the military and community functions have become further intermingled compared to earlier geographic isolation. As in most urban areas, distance is measured not in miles, but commuting time.

STATEMENT OF COMMUNITY INTERESTS

Community interests may be expressed in many ways, such as, statements by State Government, City & County Government, citizen organizations and planning groups, business or other groups. In Hawaii, the City & County of Honolulu has a unique importance which approaches that of the State Government because most of the population of the State is on Oahu. This discussion of community interests, however, will consider current concerns and refer to the State General Plan and its goals and the State Land Use Law, both unique among the 50 States.

In 1972, there are six major community concerns that directly relate to the Project FRESH Study. These are areas in which some form of action has been or will be taken, and are subjects of public discussion:

POPULATION STABILIZATION (Limitation of In-Migration, Population Dispersion to Neighbor Islands, and New Communities Program).

LAND USE PLANNING (Endangered Agriculture, Shoreline Preservation, Open Space Study, Greenbelt Application, Land Use Classifications, College Site Determination).

ADEQUATE AND ECONOMICAL HOUSING (Low and Middle Income Housing, Condominium Solutions, Urban Renewal Programs, Military Housing Deficits).

TRANSPORTATION (City Rapid Transit Proposals, Freeway Construction Routes, Neighbor Island Ferry System, Inter-Island Aircraft Services, Hydrofoil Commuting).

COST OF LIVING (Food, Housing, Land Costs, Importation Goods).

ENVIRONMENT (Pollution Abatement, Land Restoration, Endangered Species, Landscaping, Environmental Impacts, Historic Sites).

Hawaii was the first of the 50 States to have a General Plan. During its updating by the State Department of Planning and Economic Development in 1967, sixteen basic goals for Hawaii's citizens were formulated. Of these, eight have a direct impact on DOD land utilization and are cited in detail as follows:

ENVIRONMENT OF BEAUTY. Preserving Hawaii's natural resources means preserving Hawaii's natural beauty. This beautiful environment is one of the State's most valuable assets.

GOOD DESIGN. Develop high standards for design and maintenance of all public areas and stimulate application of these standards in the private sphere.

LONG-RANGE PLANNING. Increase the capacity of the State to anticipate problems. Improve facilities and methods of data collection and storage. Improve distribution of information on new developments.

LAND USE LAW. Maintain the State Land Use Law as an active instrument of State Zoning.

CONSERVING NATURAL RESOURCES. Create a program for all natural resources so that they are used productively now, and at the same time, provide for prudent conservation for the future.

EFFICIENT TRANSPORTATION. Provide an efficient network for the movement of goods and for the rapid and comfortable transportation of people throughout the State with a minimum of delay at transfer points.

IMPROVED HOUSING. Stimulate construction of housing that is safe, sanitary, comfortable, and pleasant for those whose income levels do not permit them to obtain housing in the regular market. A related goal is to stimulate construction of a variety of attractive dwelling types to meet varying needs.

PARKS AND RECREATION. Preserve and develop suitable parks and

recreational resources for satisfaction of the expanding recreation needs of residents and visitors.

The remaining eight, while valid goals in a planning context, do not relate directly to DOD land use. These are: Harmonize State and County Planning; Economic Development; Improve Public Works; Health and Well-being; Education Systems; Cultural Life; East-West Relations; and Public Safety.

During the development of the State General Plan of 1961, certain land issues became clear.

> Development of land for urban uses, in many cases, tended to occur in areas where it was uneconomical for public agencies to provide proper and adequate service facilities.
>
> Development of land for urban uses, in many cases, occurred on prime agricultural land (10% of total land area) having a higher capacity for contributing to the long-term basic economy of the State by remaining in agricultural use.
>
> There was adequate land on all the islands of the State for full development of the urban uses forecast for the next twenty years without using lands with high capacity for intensive cultivation. Development of urban areas should be encouraged in an orderly and relatively compact manner in order to provide for economy and efficiency in public services and utilities.
>
> Land not required at any given time for urban or intensive agricultural uses should receive special attention regarding land management practices and uses.

Subsequently, Hawaii became the first State in the Nation to establish a Land Use Law, with a Land Use Commission calling for classification of all lands in the State and authorizing the adoption of rules of practice and procedure and regulations for land use within the various districts. All land is classified into four districts: Urban, Rural, Agricultural and Conservation. The Land Use Districts and Regulations Review was updated in 1970.

STATEMENT OF COMMUNITY ATTITUDES TOWARDS MILITARY PRESENCE

The Community recognizes the **economic contribution** of the military to the State, and that it has specific land requirements which must be met if it is to function effectively. It asks the military if it were planning to come to Hawaii for the first time, where would it locate to meet such needs. Are the present sites the best for its present and future needs, in keeping with the changing times?

The Community is especially interested in whether those **lands ceded to the military** during World War II or following are being effectively utilized. When these lands are no longer needed for the military mission, they are to be returned to the State, while fee simple property which has been purchased by the military does not revert to the State of Hawaii when it is no longer needed. Federal, State and Estate lands have been under close scrutiny in recent years.

The Community recognizes that the phenomenal urban growth rate is likely to continue on Oahu but wants to protect its **endangered agricultural lands.** Military lands, where roads, utilities and buildings have been constructed,

cannot be readily reconverted to agricultural purposes. These are viewed as ideal sites for housing and public facilities or parks.

The Community, accepting the continuing military presence, asks that there be some means of joint **civilian-military planning** for Hawaii's future. This may require a new board or commission to facilitate exchange of information and joint planning. At present, no permanent vehicle exists for this purpose.

The Community agrees with the need for the military to review its facilities and land uses in order to formulate a long-range plan that can be made available to the public. It asks for an opportunity to critique the plan as soon as possible because of the importance of land use in Hawaii's future. The Community is now looking for sites for housing, general aviation facilities, new communities, parks and recreation, public facilities, and transit facilities in order to adequately plan for the expanding urban growth.

ANALYSIS OF COMMUNITY ATTITUDES

The information obtained from the many planning documents and reports received from local government and private groups, and from discussions and correspondence with key officials in City & County and State Governments and private individuals and civic action groups was used to produce an analysis of Community attitudes toward the existing Department of Defense presence. In some cases attitudes or policies toward an individual installation conflicted among various Community entities. Where this occurred, the policy of the group representing the majority interest of the Community was accepted. Where specific Community attitudes could not be obtained, an estimate was made of what the Community attitude might be, based upon general Community policies or goals. How strongly the Community attitude was held or the probability of change has not been indicated. Five attitude categories similar to those used in the four Services' functional analyses are used again in this analysis to provide a basis for comparison between the two sets of results. These categories are as follows:

CATEGORY I: RETAIN WITH PRESENT USE. Community planning policies support long-term retention of the installation by the Department of Defense with the existing use being continued.

CATEGORY II: RETAIN WITH INCREASED DEVELOPMENT. Community planning policies support long-term retention of the installation with a significant increase in development by the Department of Defense.

CATEGORY III: RETAIN BUT MODIFY PRESENT USE. Community planning policies support long-term retention of the installation by DOD but only with a major modification in the category of use of the installation.

CATEGORY IV: RETAIN BUT DECREASE PRESENT USE. Community planning policies support long-range retention of the installation but only with a significant decrease in the DOD use of the installation.

CATEGORY V: SUSPEND USE. Community planning policies advocate that DOD suspend its use of and vacate the installation.

MAP DESCRIPTION

The map on the facing page presents the results of the Community Attitudes analysis.

The Pearl Harbor-Hickam AFB area has traditionally been the center of military activity and the Community has recognized this area as fulfilling hardcore military requirements. Hickam Air Force Base with its location adjacent to Honolulu International Airport is felt to be well suited for its function. Schofield Barracks is also accepted as the Army's base of operations in Hawaii.

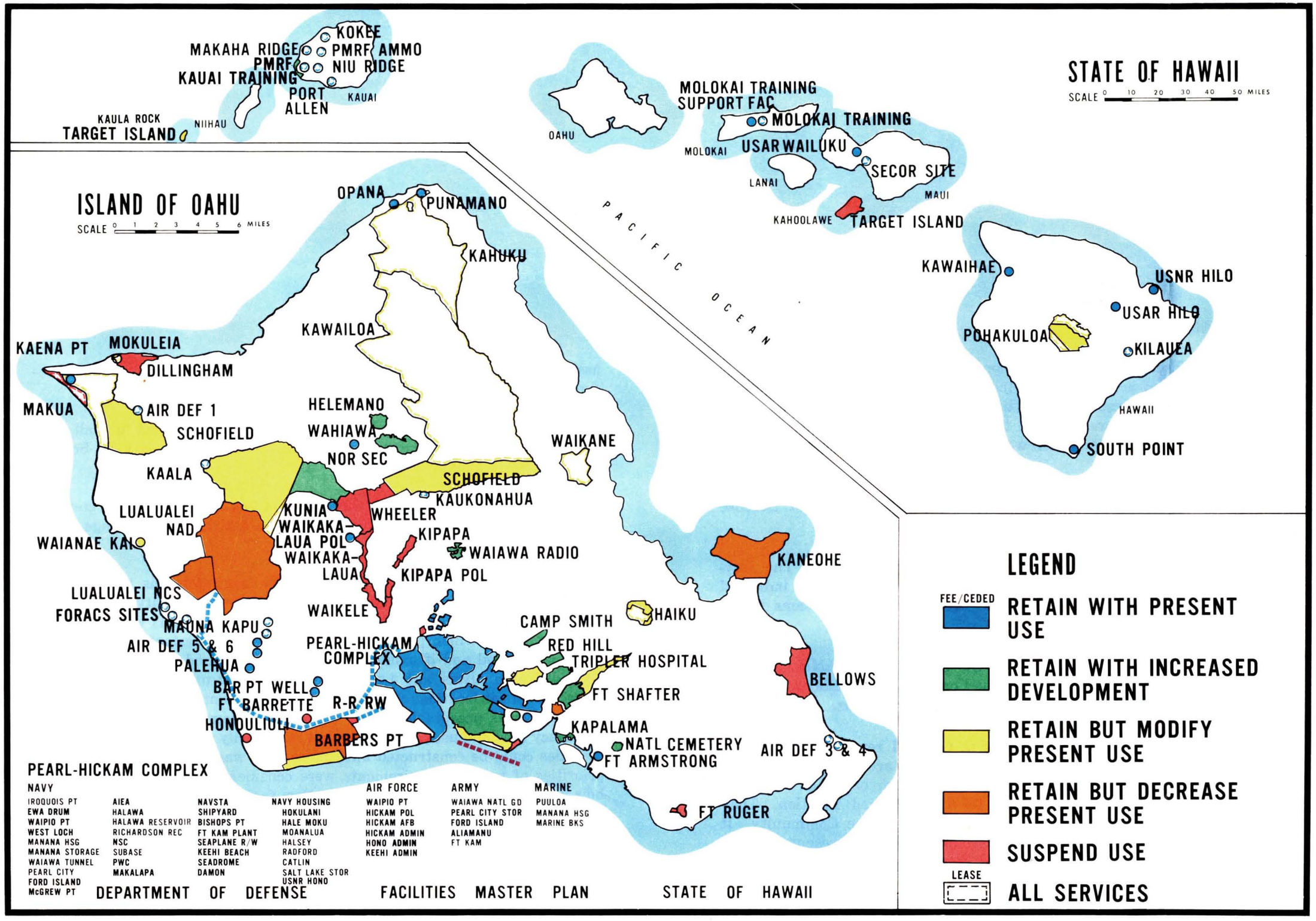
The military must take into account environmental degradation of lands, especially in their use of training areas (Schofield Barracks, East Range, Kahuku, Makua and Waikane on Oahu and Pohakuloa on the Island of Hawaii) for live firing, maneuvers, bivouac and other uses. Many of these mountain slopes and valleys are subject to erosion, and protection of plant and animal species should be a concern. The urban areas have not yet reached this far, but in future decades military training lands may be needed for a higher purpose.

The impact of high speed jet aircraft on present and future housing areas should be re-evaluated in terms of their present use. The Community feels that MCAS Kaneohe and NAS Barbers Point should both be restudied to determine if noise problems and safety hazards can be reduced.

The analysis indicates that where possible, objectionable Service facilities such as ammunition storage and communication antennas should be consolidated. These should be located as far from urban growth areas as possible. Communications and ammunition storage areas at Lualualei are discussed in terms of decreasing present use, the Aliamanu ammunition storage area in terms of modifying present use, and the Waikakalaua, Kipapa and Waikele ammunition storage areas in terms of suspending use of those installations.

The Community attitude of suspending activity at Wheeler AFB and a small portion of Schofield Barracks East Range is manifested by the desire to use the areas for urban expansion. The Community desires suspension of military activity at Bellows AFS, and advocates use of the area as a light plane airfield and beach park facility. The Community objects to the military use of Kahoolawe as a target and prefers that it be used as a conservation, recreation and park area.

COMMUNITY PLANNING ATTITUDES TOWARDS EXISTING FACILITIES



LONG-RANGE SITES

In Chapter Three, "Existing Conditions," functional analyses were summarized in a set of maps that reflected long-term Service attitudes toward each installation. These Service attitudes were compared with the Community attitudes just presented on the preceding pages. As the result of this comparison, each installation was placed into one of three groups:

GROUP I: AGREEMENT ON DOD RETENTION. The Services' analyses and the Community analysis indicated that the Department of Defense should retain these installations in some form.

GROUP II: AGREEMENT ON SUSPENSION OF DOD USE. The Services' functional analyses and the Community attitudes analysis indicated that the Department of Defense should vacate these installations in the future.

GROUP III: DISAGREEMENT ON DOD RETENTION AND/OR USE. The Services' functional anaylses and the Community attitude analysis did not agree on either retaining or vacating these installations.

It was concluded that the installations in Group I represented good potential for long-term DOD retention and use. They are installations which are currently satisfactory for the assigned function or which have the potential of being made satisfactory for the assigned function. They represent a DOD installation presence acceptable to the Community. It was concluded that the installations in Group II did not represent good potential for long-term DOD retention and use; that at an appropriate time the functions currently being performed at those locations should be relocated; and that use of the installations should be suspended. Each of the installations initially falling into Group III was re-evaluated and was then assigned to either Group I or Group II, based on the results of the re-evaluation.

No installation was retained simply because it happened to fall into Group I. The functional analysis also had to demonstrate a valid Service need for the installation.

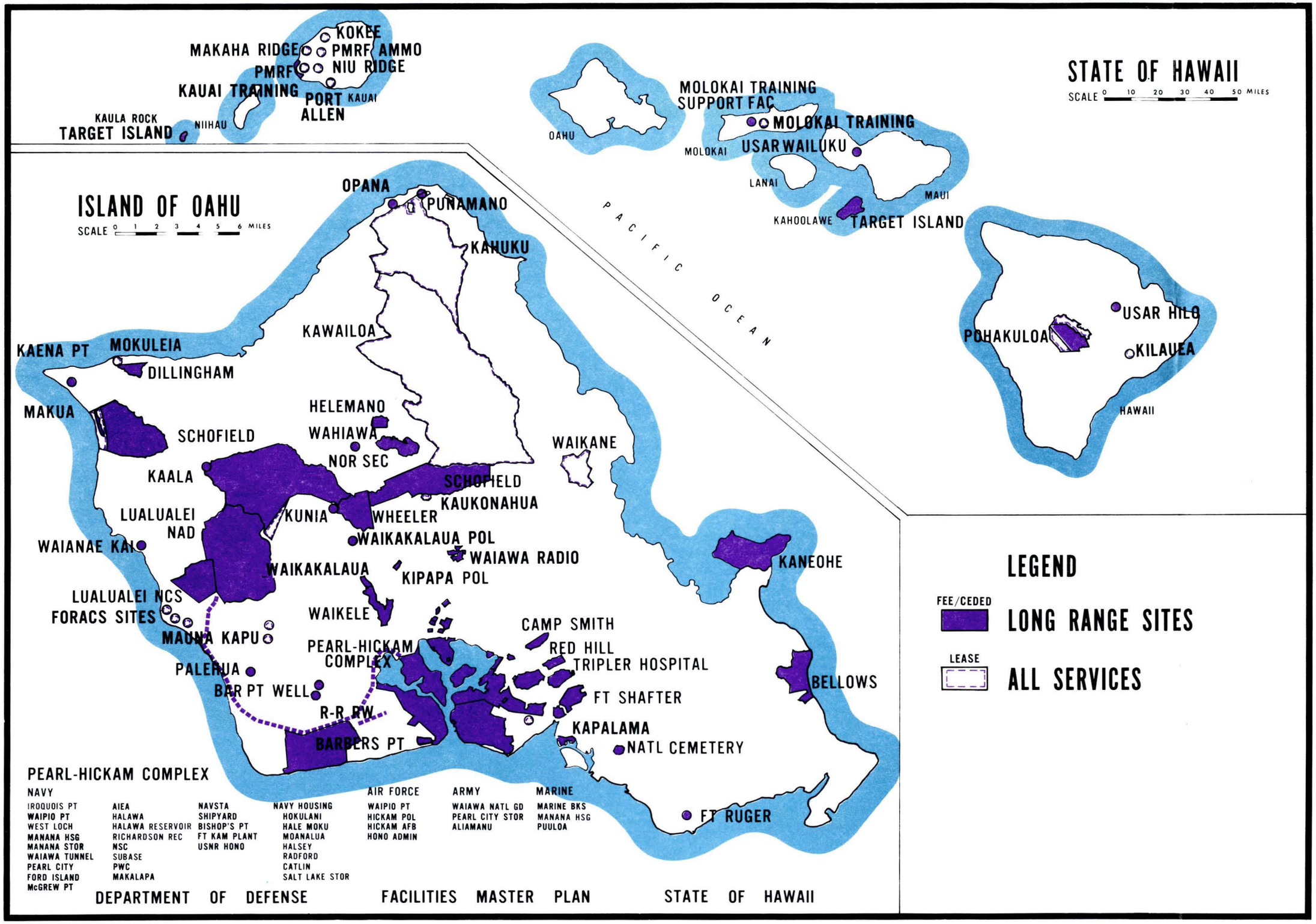
The installation sites selected through analyses for long-range retention are depicted on the map on the facing page entitled "Long-Range Sites, Composite."

With the long-range locations identified, the next step was to determine how these locations could be developed to satisfy the facility needs of the Services. An analysis of each of these long-range locations was conducted to determine on which parcels the various Service missions could be optimally performed and if existing usage reflected sound land use planning. Secondly, an analysis was made to determine how much potential existed at each of these locations for additional development and what type of development was acceptable to the surrounding community. An indicated deficiency in a land use category did not necessarily mean that no additional facilities could be constructed until more land was obtained. The relative priorities of various requirements were considered in order to determine how requirements could best be met. New facilities may be sited adjacent to or between existing facilities. Old or uneconomical facilities may be demolished and replacement facilities constructed at a new location in order to provide a site for a new facility. Certain functions may be consolidated so as to make land available for other purposes.

The analyses of the recommended Long-Range Sites provided the basis for the LONG-RANGE PLAN described in Chapter Five.

LONG RANGE SITES

COMPOSITE



NOTES

CHAPTER FIVE
LONG-RANGE PLAN

THIS CHAPTER CONTAINS THE LONG-RANGE PROPOSALS TO CORRECT THE DEFICIENCIES IDENTIFIED IN CHAPTER THREE. THE LONG-RANGE PLAN IS DISCUSSED ON A COMPOSITE BASIS AND ALSO INDIVIDUALLY FOR EACH SERVICE.

LONG-RANGE PLAN--COMPOSITE

In Chapter Four, "PLANNING ANALYSIS," the methods used to select those locations to be retained for long-range use and to determine their capability for increased or changed development were discussed. Based on Service requirements summarized in Chapter Two, "FACILITY REQUIREMENTS," and the analysis in Chapter Four of long-range sites, a LONG-RANGE PLAN was developed for each Service. The PLAN is described generally in terms of where the Services should locate facilities to satisfy various mission and task requirements. The needs and utilization of the installations described are considered essential to accomplish Department of Defense long-range missions in Hawaii. Only those lands required to support hardcore Service missions are proposed for retention.

In developing the LONG-RANGE PLAN, every effort was made to consolidate functions both inter- and intra-Service for more efficient operations and to centralize, where possible, certain functions to gain more efficient utilization of land.

Where Department of Defense activities have heavy investments in existing plant of a permanent nature and the use is consistent with the surrounding neighborhood and good planning practices, the retention and continued or increased use of the area is proposed.

Although it was considered, this PLAN does not propose relocation of any Department of Defense installation from Oahu to Neighbor Islands. Prohibitive relocation costs and new construction costs, even over a 15-year period, are the prime mitigating factors. Service policy and general Community attitude agree with the concept of retention of existing military installations on Oahu.

All of the proposed long-range Department of Defense locations in the State of Hawaii are shown on the map on page 59. The installations are color coded to indicate which Service has control. The geographical boundaries of large installations are shown; the location of small facilities are indicated by circles; and a square is used to indicate a Service presence on an installation controlled by a different Service.

PLAN PROPOSAL

Command and major administrative centers of the Department of Defense were found to be favorably located in the Pearl Harbor-Hickam-Shafter area. It was determined that this area should be retained as the center of the Services' headquarters activities along with the Navy's Fleet operations and the Air Force's air support mission.

Recognizing the apparent dichotomy of purpose to decrease DOD presence in Hawaii and at the same time maintain military operational integrity, maximum application was made of joint-use concepts. The major recommendations in these areas include:

AMMUNITION. It is proposed that the Army's ammunition, currently stored in Aliamanu, Kipapa and Waikakalaua, be relocated to the Navy storage areas at the Waikele, West Loch and Lualualei branches of NAD Oahu.

COMMUNICATIONS. As the "state-of-the-art" permits and as communication systems require replacement, transfer of Air Force transmitting facilities from Bellows AFS to the Navy transmitter site at Lualualei, and Air Force receiver facilities from Wheeler AFB to NAVCOMMSTA Wahiawa are recommended. This will free land at both Bellows AFS and Wheeler AFB to meet other DOD land use requirements.

WAREHOUSING. The PLAN proposes elimination of the Manana Storage Area and consolidation and centralization of Navy warehousing at the Naval Supply Center's storage complex at Pearl City Peninsula. It is also recommended that Army warehousing functions be consolidated in the Schofield Barracks area. Use of warehouse facilities at Kapalama could then be suspended.

TRAINING. As has been noted previously, training represents the single largest military land use requirement. It is physically impossible for each Service to satisfy its requirements separately using existing assets. Although troop maneuver areas are being used jointly by two or more Services, the PLAN proposes an increased emphasis on this practice. Increased Marine Corps usage of Army areas at Schofield Barracks, Kahuku, Kawailoa and Pohakuloa is recommended. Joint use of Kahoolawe and Kaula Rock must of necessity be continued.

FAMILY HOUSING. As a result of land shortages, construction of multi-Service family housing projects on the few remaining sites is a necessity. Aliamanu (currently used for ammunition storage), Waiawa Radio, and Puuloa are proposed as sites for DOD family housing.

Air operations pose serious problems with regard to possible consolidations. All Services have air operations requirements and it was the general conclusion that, based upon utilization factors and existing assets, each requires its own separate and noninterfering facility.

This PLAN also recommends that use of all or portions of over 50 parcels of military land be suspended. Many of these areas include significant amounts of residential and commercial real estate. Examples are the Keehi seadrome adjacent to Honolulu International Airport (519 acres), portions of Dillingham Air Force Base (296 acres), portions of Bellows Air Force Station (144 acres), and part of the Puuloa Training Facility (34 acres).

The Services have been strong advocates of environmental protection and pollution control. Throughout the formulation of the LONG-RANGE PLAN, the concepts of pollution abatement, open space preservation and land restoration have been kept uppermost in mind. The PLAN strongly recommends that the Services continue to provide active representation on Community-sponsored environmental Task Forces and through Service-sponsored programs attain a high-quality environment. Continuing action is required on noise suppression, streams and harbor pollution abatement, and air pollution abatement. This PLAN also proposes continued preservation of existing wildlife refuge, conservation, watershed and park areas.

SUMMARY

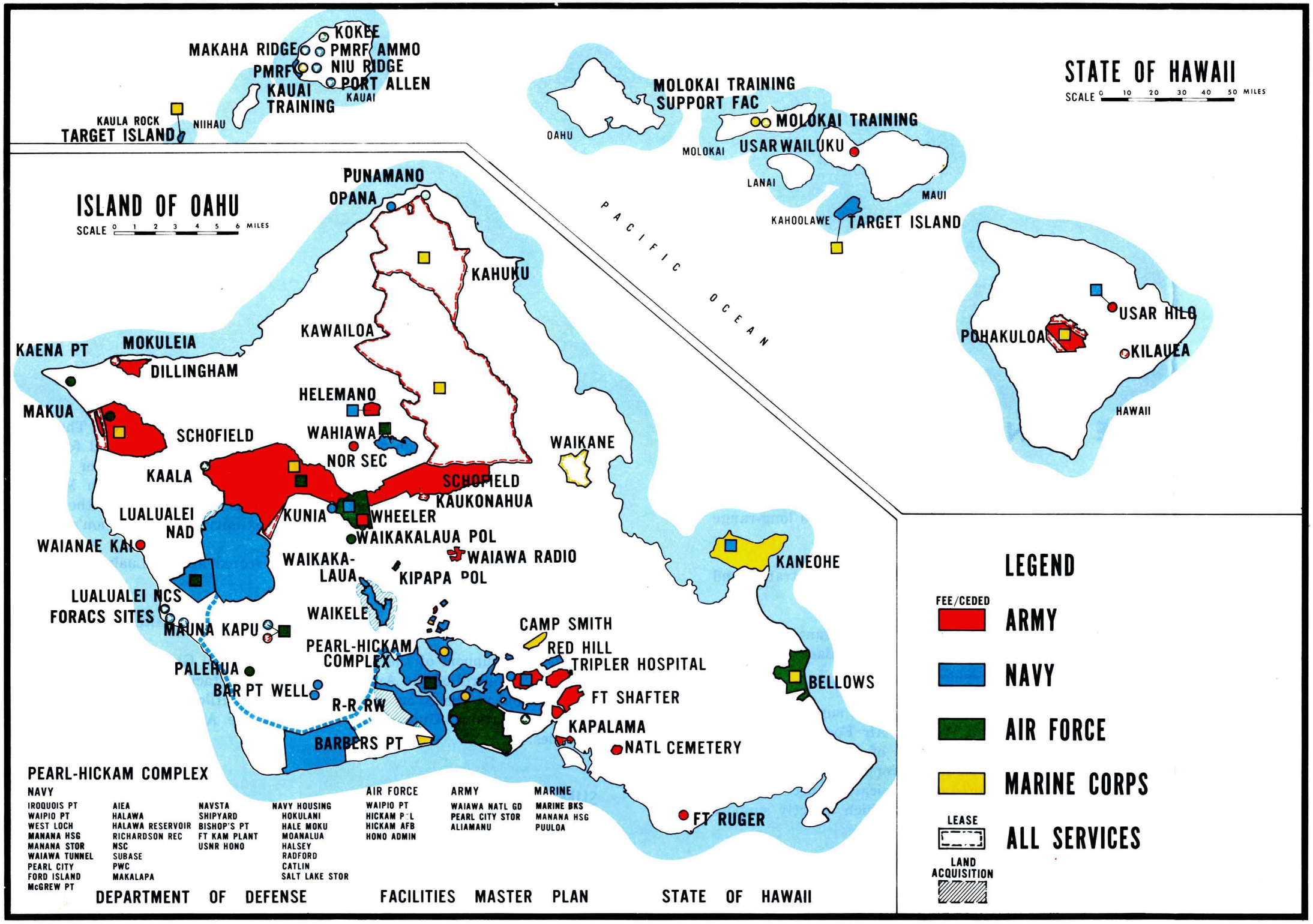
In summary the LONG-RANGE PLAN proposes that use of 9,482 acres of the present 284,965 acres of Department of Defense landholdings in the State of Hawaii be suspended and that an additional 1,918 acres be acquired. The DOD landholdings included in the planned long-range sites total 277,401 acres.

The estimated cost of providing all the facilities included in the LONG-RANGE PLAN is $1.4 billion.

On the following pages each Service's portion of the LONG-RANGE PLAN is explained in more detail.

LONG RANGE PLAN

COMPOSITE



LONG-RANGE PLAN--ARMY

The map on the facing page represents the Army portion of the LONG-RANGE PLAN. This PLAN reflects the needs for utilization of installations and facilities considered essential to support the Army's long-range mission in Hawaii.

PLAN PROPOSALS. U. S. Army, Pacific (USARPAC) administrative and support functions remain at Fort Shafter.

Schofield Barracks is recommended for retention as the Infantry Division headquarters and cantonment complex. Wheeler Air Force Base is proposed as the site for Division Aviation operations.

U. S. Army Support Command, Hawaii and its logistical support elements are to remain at Schofield Barracks and Wheeler Air Force Base where increased development can take place. Relocation of Army warehousing facilities from Kapalama to Wheeler AFB is proposed when areas at Wheeler AFB presently used for Air Force communications become available. It is proposed that Army satellite elements which directly support USARPAC be located with USARPAC at Fort Shafter.

Divisional small unit training areas and small arms live firing areas should be located as close as possible to the Division cantonment area. It is recommended that Schofield Barracks, Kawailoa and Kahuku training areas be retained to meet these requirements and that a portion of Dillingham Air Force Base be used as a maneuver staging area. The Pohakuloa Training Area on the Island of Hawaii is to be retained for use as a brigade-size maneuver area. This area will also be used for heavy weapons live firing. Heavy weapons live firing will continue in Makua Valley, in the Kaena Point area of Oahu. This location will fill the need for a heavy weapons firing range in the proximity of the Division's base.

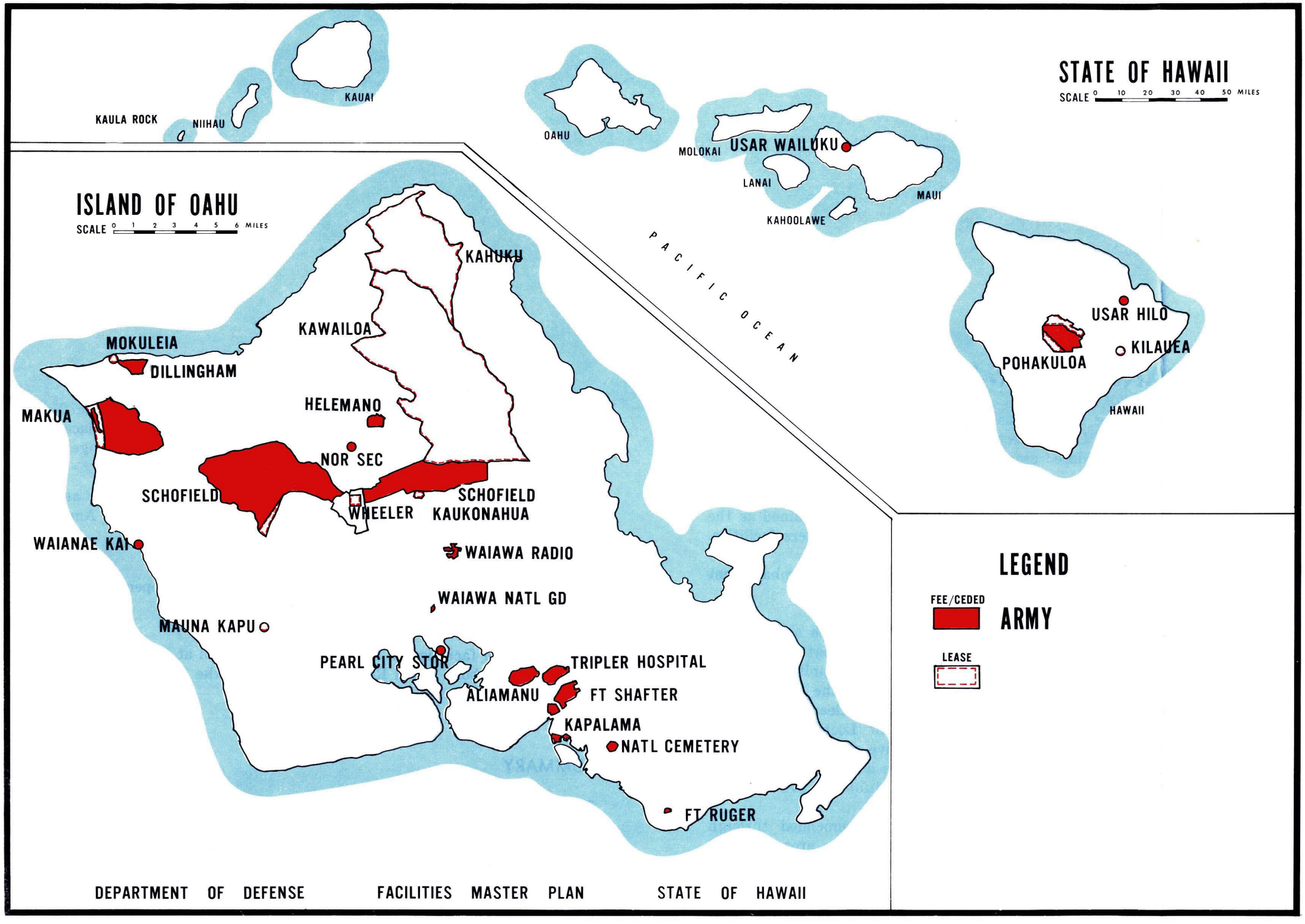
It is proposed that Army ammunition be stored at the Lualualei, West Loch and Waikele branches of NAD Oahu.

Tripler Army Medical Center will remain at its present site.

Facilities in support of the Hawaii Army National Guard will remain on land under control of the Army. Army Reserve facilities will be retained on Oahu and at the Army Reserve Facility in Hilo. Both the Army Reserve and National Guard will continue to use Army training area and facilities.

SUMMARY

The Army LONG-RANGE PLAN proposes the use of 170,034 acres of land. In implementing the PLAN the Army will suspend use of six installations and parts of 10 other installations. A net decrease of 5,656 acres in the amount of land being used by the Army is proposed. The estimated cost of providing the facilities included in the Army portion of the LONG-RANGE PLAN is $680 million.



DEPARTMENT OF DEFENSE FACILITIES MASTER PLAN STATE OF HAWAII

LONG-RANGE PLAN--NAVY

The map on the facing page represents the Navy portion of the LONG-RANGE PLAN. This PLAN reflects the needs for utilization of installations and facilities considered essential to support the Navy's long-range mission in Hawaii.

PLAN PROPOSALS. The Pearl Harbor complex is to be retained as the major location of Fleet operations and support and headquarters facilities.

Continuation of active air-to-ground and ship-to-shore bombardment training is proposed at Kahoolawe and Kaula Rock.

Naval Ammunition Depot facilities at Lualualei, West Loch and Waikele are proposed for long-range use. It is also proposed that these Navy areas be used for storage of Army and Air Force ammunition. Establishment of park areas on Waipio Peninsula for use by the civilian community is recommended where permitted by safety clearance criteria. Acquisition of additional areas at Lualualei, West Loch and Waikele, totaling 1,840 acres, is proposed to satisfy explosive safety clearance requirements. In addition, air space control over an additional 78 acres is required at Barbers Point for a total planned acquisition of 1,918 acres.

A consolidation of Navy warehousing areas is recommended through relocation of the Manana storage facilities to the storage area on Pearl City Peninsula.

Retention of Naval Communication Station areas at Lualualei and Wahiawa is proposed. It is also recommended that Air Force communications facilities at Wheeler AFB and Bellows AFS be relocated to the Navy communication sites when these Air Force facilities require replacement at the ends of their useful lives or through "state-of-the-art" changes.

Use of Aliamanu Crater for a joint Army/Navy family housing area is recommended after Army ammunition is relocated to the Naval Ammunition Depot, Oahu.

It is recommended that Pacific Missile Range Facility operations be retained at Barking Sands, Kauai.

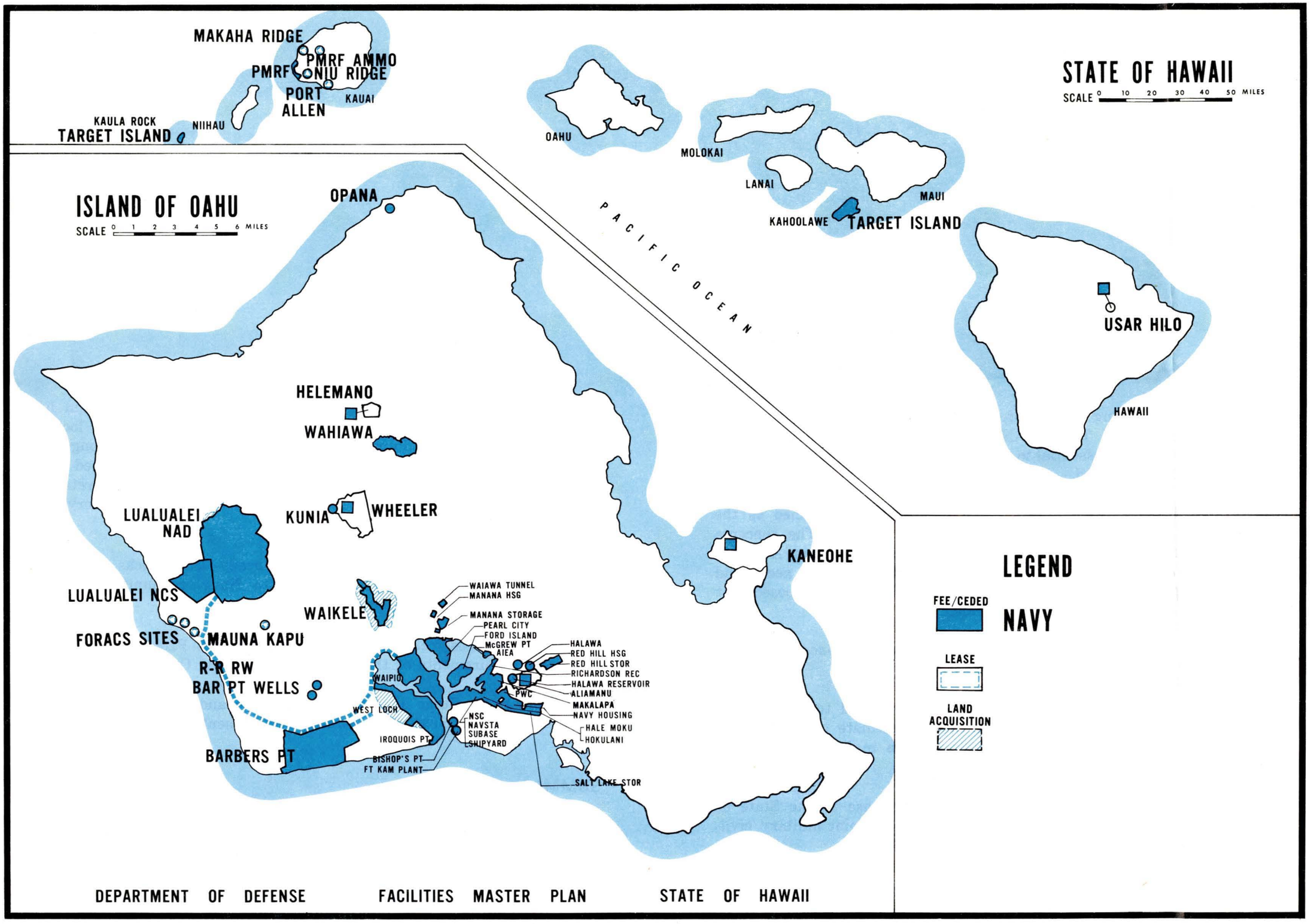
Naval Reserve facilities on Oahu are to be retained at the Salt Lake area near Pearl Harbor. Naval Reserve functions on the Island of Hawaii will be housed in the Army Reserve Facility in Hilo.

SUMMARY

The Navy LONG-RANGE PLAN proposes the use of 54,433 acres of land. This includes 1,918 acres which must be acquired by the Navy. In implementing the LONG-RANGE PLAN, it is proposed that the Navy suspend use of seven installations and parts of 12 other installations, which would release 2,606 acres of present Navy land. The estimated cost of providing the facilities included in the Navy portion of the LONG-RANGE PLAN is $427 million.

LONG RANGE PLAN

NAVY



DEPARTMENT OF DEFENSE FACILITIES MASTER PLAN STATE OF HAWAII

LONG-RANGE PLAN--AIR FORCE

The map on the facing page represents the Air Force portion of the LONG-RANGE PLAN. This PLAN reflects the needs for utilization of installations considered essential to support the Air Force's long-range mission in the State of Hawaii.

PLAN PROPOSALS. Hickam Air Force Base is to be retained as the primary installation for Air Force operations in Hawaii. The concepts in the Air Force's long-range modernization plan for Hickam AFB are reflected in this PLAN. When Fort Kam is excess to Army needs and Army housing now at Fort Kam is relocated elsewhere, it is proposed that Fort Kam be transferred to the Air Force.

Wheeler Air Force Base will be retained as a support base with Army aviation functions also being located there.

The retention of Bellows Air Force Station is proposed to support Air Force communications requirements for the intermediate term. The use of Bellows AFS for recreation facilities and as a major Marine Corps training area is recommended for the long term.

A portion of Bellows AFS is recommended for release to the State of Hawaii for use as a light plane airfield. Expansion of joint military/civilian use of beach areas on Bellows is also proposed.

It is recommended that Air Force communications facilities, presently located at Bellows AFS and Wheeler AFB, be consolidated with the Navy's communications facilities at Lualualei and Wahiawa when these Air Force facilities require replacement at the end of their useful life or through "state-of-the-art" changes. Kaala Air Force Station, located on Mt. Kaala, Oahu, and Punamano Air Force Station on Oahu, along with Kokee Air Force Station on Kauai, are to be retained for continued long-range use as communications sites. Kaena Point, Oahu will be retained for satellite tracking capability and the Palehua Solar Observatory and Research Site will be retained.

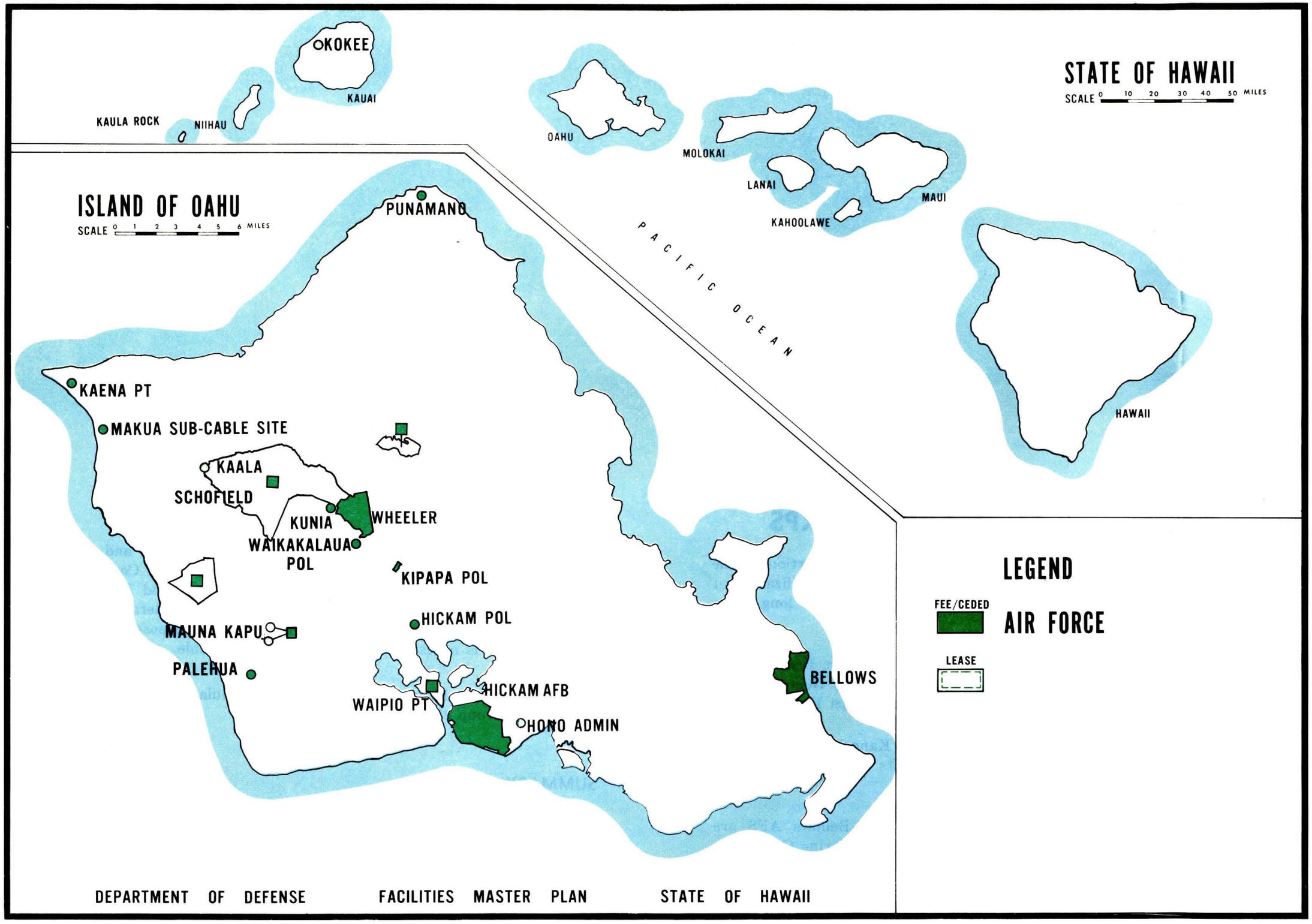
It is proposed that ammunition, except ready-issue stocks, presently stored at Wheeler AFB be relocated into Navy ammunition storage facilities.

Air Force facilities included in this LONG-RANGE PLAN are sufficient to satisfy requirements of the Hawaii Air National Guard.

Other minor Air Force sites for POL storage and distribution systems are to be retained to satisfy long-range requirements.

SUMMARY

The Air Force LONG-RANGE PLAN proposes the use of 5,233 acres of land. In implementing the LONG-RANGE PLAN the Air Force will suspend use of three installations and parts of four other installations. A net decrease of 660 acres in the amount of land being used by the Air Force is proposed. The estimated cost of providing facilities included in the Air Force portion of the LONG-RANGE PLAN is $193 million.


OKOKEE
KAUAI
KAULA ROCK
NIIHAU
OAHU
MOLOKAI
LANAI
KAHOOLAWE
MAUI
HAWAII
STATE OF HAWAII
SCALE 0 10 20 30 40 50 MILES
ISLAND OF OAHU
SCALE 0 1 2 3 4 5 6 MILES
PUNAMANO
PACIFIC OCEAN
KAENA PT
MAKUA SUB-CABLE SITE
KAALA
SCHOFIELD
KUNIA
WHEELER
WAIKAKALAUA POL
KIPAPA POL
HICKAM POL
MAUNA KAPU
PALEHUA
WAIPIO PT
HICKAM AFB
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BELLOWS
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DEPARTMENT OF DEFENSE FACILITIES MASTER PLAN STATE OF HAWAII

LONG-RANGE PLAN--MARINE CORPS

The map on the facing page represents the Marine Corps portion of the LONG-RANGE PLAN. This PLAN reflects the needs for utilization of installations considered essential to support the Marine Corps long-range mission in the State of Hawaii.

PLAN PROPOSALS. Camp Smith is to be retained as the Headquarters of: the Commander in Chief Pacific; the Commanding General, Fleet Marine Force, Pacific; and the Commander, Marine Corps Bases, Pacific.

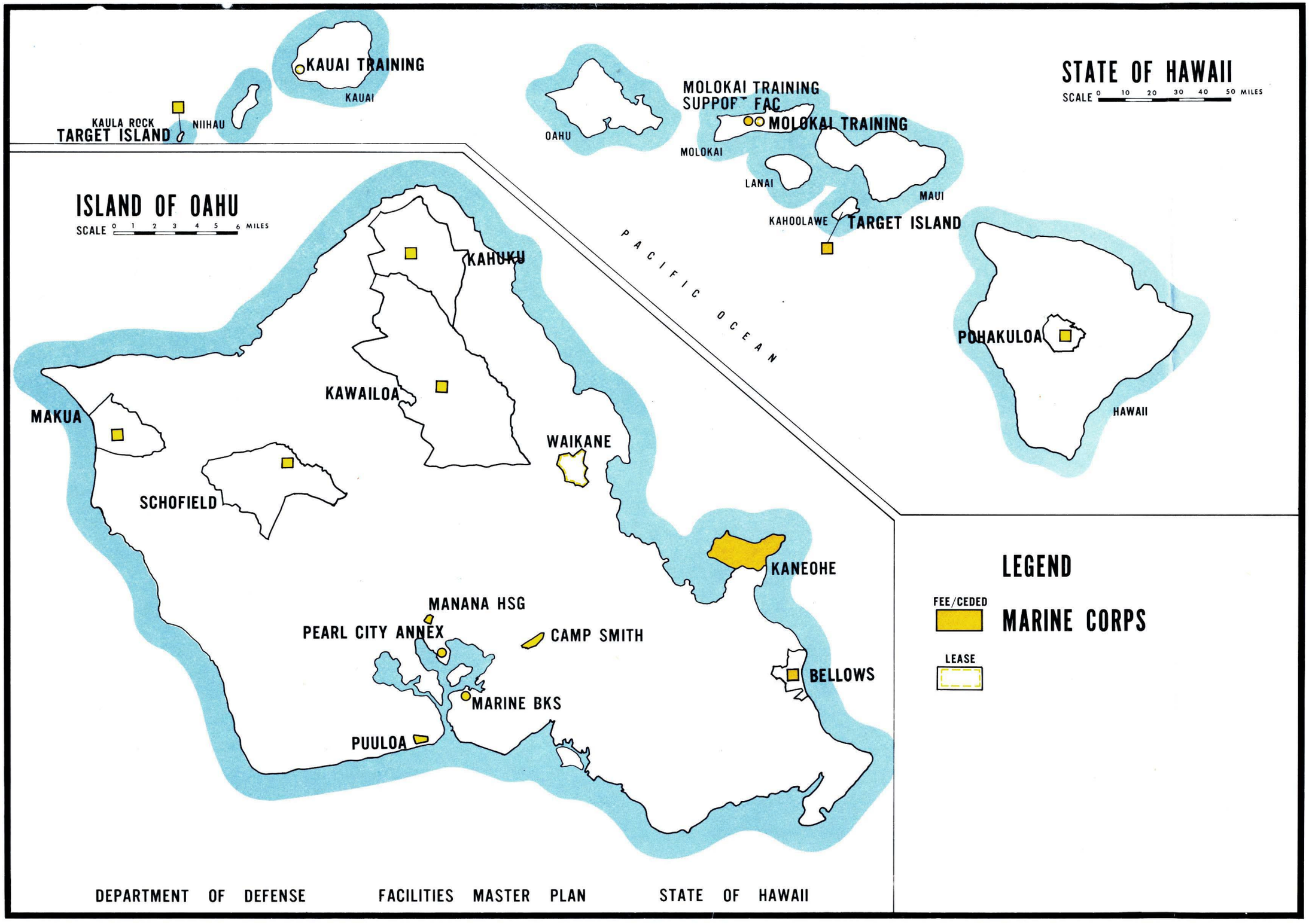
It is recommended that Marine Corps Air Station, Kaneohe remain as the long-range site for the air and ground components of the First Marine Brigade.

The training areas at Waikane, Kauai, Molokai and Bellows AFS are proposed as long-range training sites in support of all Marine Corps personnel on duty in Hawaii. Long-term lease and permit arrangements are recommended to provide for continued use of the Waikane, Kauai and Molokai areas. With the proposed removal of Air Force communications facilities from Bellows AFS, increased development of this area in support of Marine Corps training is recommended. Continued and expanded joint use of Army training areas to partially fill Marine Corps requirements is proposed. With the buildup of both Army and Marine Corps units in Hawaii, it is recognized that this poses considerable problems. However, since no other land suitable for training purposes is available, this procedure is necessary and is considered feasible.

Long-range continued use of Kahoolawe and Kaula Rock is proposed for Marine Air Group close air support training.

SUMMARY

The Marine Corps LONG-RANGE PLAN proposes the use of 47,701 acres of land. In implementing the LONG-RANGE PLAN the Marine Corps will suspend use of parts of five installations. A net decrease of 560 acres in the amount of land being used by the Marine Corps is proposed. The estimated cost of providing the facilities included in the Marine Corps portion of the LONG-RANGE PLAN is $148 million.



DEPARTMENT OF DEFENSE FACILITIES MASTER PLAN STATE OF HAWAII

NOTES

CHAPTER SIX
IMPLEMENTATION

THIS CHAPTER CONTAINS A GENERAL DISCUSSION OF MEANS OF ACCOMPLISHMENT, IMPLEMENTATION COSTS, AND GENERAL DEVELOPMENT GUIDELINES. ALSO INCLUDED ARE RECOMMENDATIONS CONCERNING THE FOLLOW-ON EFFORT NECESSARY TO KEEP THIS PLAN CURRENT.

IMPLEMENTATION

This PLAN has been developed and is structured on a multi-Service regional basis. The PLAN is intended for use in activity master planning and for development of Services' program objectives necessary to satisfy current deficiencies and fulfill long-range requirements. To assure maximum benefit for the Department of Defense and the State of Hawaii, all future planning actions and studies should be based on the multi-Service concept rather than on a single-Service planning approach.

This PLAN is based upon assumed projections of long-range force levels and support requirements essential to DOD's planned future mission in Hawaii. By its very nature, the PLAN is broad and generalized in its approach. It is not intended, however, to be an inflexible document which negates the opportunity or disregards the necessity for change. The need for continual review and validation is recognized and is considered a requirement. Projects developed by the Services should be evaluated on the basis of their compatibility with the PLAN. In the event of conflicts, the project or the PLAN should be revised as appropriate.

MEANS OF ACCOMPLISHMENT

It is estimated that the cost to provide all the facilities required by the Services in the State of Hawaii to meet their long-range needs and correct their facility deficiencies would be $1.4 billion. The PLAN recommends some decreases and some increases in the facilities proposed by the Services. The recommended changes are based on land utilization studies. The net result, however, did not make a significant change in the total estimated cost for facilities.

In general, the facilities planned and programmed by the Services must still be constructed. When they are constructed, they should be sited to conform to the proposals for optimum land utilization, facility consolidations, functional collocations, and joint usage contained in this PLAN.

The needs for upgrading existing assets and providing additional facilities in support of the rollback of military units from the Far East and Southeast Asia are supported through the land use recommendations of the PLAN.

In general, normal funding and real estate procedures exist for accomplishing the proposals in the PLAN. The Military Construction Program will account for the majority of procurement actions with excessing actions being accomplished through existing General Services Administration procedures. It is recommended that, where feasible, Department of Defense lands which will be released be used in trade for other lands proposed for acquisition. An example of this action is the Army's release

of unneeded Army land at Fort Ruger in exchange for State of Hawaii land above Tripler Army Medical Center. The land obtained by the Army will be used for family housing. Where there will be release of land parcels contingent upon land transfers or compensation for facility replacement incident to relocation, appropriate procedures will have to be established. These types of actions, however, are not without precedent and are considered entirely feasible.

IMPLEMENTATION GUIDELINES

As broad guidelines for the implementation and timing of specific actions, the following policies are recommended:

SHORT-RANGE ACTIONS

- Early implementing action in accordance with the PLAN should be initiated to correct those deficiencies which are the most acute.

- Actions not requiring an extensive facility construction program are also recommended for early implementation.

- Action should be taken in the near future to limit the siting of presently planned facilities to those installations identified in the PLAN as long-range sites. An example is the use of Aliamanu Crater as a site for multi-Service housing.

- Projects in support of the rollback of military units including the First Marine Brigade and the 25th Infantry Division, U. S. Army should be developed at an early date. Construction of new facilities to permit relocation of units, as well as construction of new facilities specifically for the returning units, are included in this category.

- Areas that have been cited as presently unused or that are unusable and have been proposed for suspension of use, should be released as soon as possible.

INTERMEDIATE- AND LONG-RANGE ACTIONS

Policies should be established and programs and projects developed to effect the proposed replacements/relocations at the time facilities reach the ends of their useful lives or require replacement due to changes in technology. Included in this category would also be the development of projects to support the PLAN for facility or functional consolidations or for relocations incident to modifying land use.

FOLLOW-ON

The following specific actions are proposed as continuations of the planning and implementation guidelines expressed in the PLAN:

- Obtain appropriate Executive approval of the PLAN concept.

- Conduct specific studies dealing with consolidation and/or collocation of ammunition storage, communications, housing and training facilities for further PLAN refinement.

- Re-evaluate existing Service Master Plans for each Department of Defense activity in the State of Hawaii and revise as necessary to effect agreement with this PLAN.

- Coordinate the PLAN with appropriate State of Hawaii and City & County planning organizations. Pursue release and transfer actions as proposed in the PLAN. Establish means for ongoing civilian/military formal planning coordination.

- Develop coordinated funding programs necessary for accomplishment of various actions proposed by the PLAN.

- Develop an updating procedure for this PLAN based on a continuing review and planning effort. Establish an organization for this effort similar to that developed and used for preparation of the PLAN with Tri-Service coordination at the Hawaii level and with DOD guidance, review and approval.

- Use this PLAN as the main supporting document when conducting future studies of real property utilization as required by Executive Order 11508.

NOTES